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The Building Movement of the Country.

THE building movement of the country is a subject of no small interest to the architect, as well as to all that great host of industrious persons who are connected with the building trades. We are not so much referring to the numeric increase which is actually taking place in the number of inhabited houses (which is at the rate of upwards of 180 per day, counting only six days in the week), as to the distribution of this activity over the country. As to this, the action of three principal laws results from very extended research as found to be in operation at the present time.

In the first place, the activity of the builder is remarkably concentrated. The growth of towns seems to be, to some extent, a function of their size. Those of less than 10,000 inhabitants (at all events, as far as boroughs are concerned) have hardly grown at all within the last decade. Many of them have actually declined in the number of the inhabited houses that they contain. And all of them, taken together, have not grown on an average as much as one per cent. in ten years

At the other extremity of the scale (with one or two significant exceptions) the largest towns are also the most rapid in their growth. The urban population is not only double the rural population, but, decade after decade, it more and more preponderates. In London the increase is, at a first glance, somewhat anomalous. In the central area there has been a steady decrease of 5·8 per cent. from 1861 to 1871, and of 7·8 per cent. from 1871 to 1881, taking population as the standard. But, while the ten registration districts which form the central area of London have thus lost 13·4 per cent. of their inhabitants in twenty years, the loss may be, to a great extent, accounted for by the fact that sleeping accommodation has been sacrificed to office accommodation, so that, while the real day and night dwellers have declined, the merely day population has, in a countervailing manner, increased; for, in the outer ring as defined by the Registrar-General, the population has increased by 126·8 per cent. in twenty years. In the area intermediate between these two districts the increase has been at about half that rate, so that the total increase of "Greater London" has been 22·6 per cent. in the last ten years, and 47·8 per cent. in the last twenty, taking, of course, the census years for comparison.

This rapid rate of increase has not been rivalled in either of the six great English towns which, containing upwards of 200,000 inhabitants each, are in all equal to about two-fifths of the population of Greater London. Sheffield, Liverpool, and Bristol, have increased respectively by 18·4, 17·8, and 17·8 per cent. in the decade; Leeds by 16·4, Birmingham by 14·1, and Manchester by only 6·0 per cent. Below these, the sixteen towns containing between 100,000 and 200,000 inhabitants each, show the more rapid average growth of 21·5 per cent. in a decade, treading more closely on the heels of London than do the six first-class provincial cities; and Bradford, the largest of the sixteen, has increased by 25·3 per cent.

The towns containing between 50,000 and 100,000 inhabitants are increasing at the average rate of 17 per cent. Here, however, an element of growth becomes apparent, which is due to the second law, namely, that the increase of the ports and seaboard towns is much more considerable than that of the inland towns.

Thus Great Grimsby has increased by no less than 62·9 per cent. in ten years, Gateshead by 42·9 per cent., Hartlepool by 34·7 per cent., Hull by 29·6 per cent., Swansea by 28·5 per cent., Sunderland by 27·5 per cent., Cardiff by 45 per cent. Nor is the movement confined to great trading ports. Hastings has grown by 43·7 per cent. in ten years, Brighton by 25·1 per cent., Bournemouth by 185 per cent.; and if we took the increase for the decade 1874-1884, the last-named place would probably be found to have more than trebled its population. Thus on the one hand the calls of business, and on the other the attractions of sea air, are steadily diverting an increasing proportion of the population of England to the seaboard towns.

The third law is one to which we have previously called attention. Its operation may, to a certain extent, prove to counteract the aggregative tendency before shown to exist. It is that of direct relation between rateable value and density of population. We have previously shown (vol. xlvi., p. 922) how close this relation is, and attention must be given to the fact that the range of rateable value is very considerable. Thus, while for the whole of London we have a mean rateable value of 52·2*l.* per house, in the Mile End Old Town Union this value is as low as 23·9*l.* per house; while in the City of London proper it rises to 541*l.* per house. It is thus conceivable that rents and rates may rise with the concentration of population, and its increase on a given area, to a point at which the cost of living becomes so excessive as to arrest further growth, if not to cause decline to set in. There are not a few figures in the Blue Books which form the voluminous and wholly undigested literature of this subject, which point in this direction, showing decline of population in certain very important centres, as well as in minor towns.

An admirable paper, which was contributed by Mr. Alfred Hickman, President of the Wolverhampton Chamber of Commerce, to the Social Science Congress in Birmingham in September last, and which has been printed in pamphlet form,* gives some very significant facts as to a movement which threatens so much danger in the distribution of the building activity throughout England. We may observe that Wolverhampton, although the eighth English town (exclusive of the metropolis) in population, has only increased by 3·5 per cent. in the number of its inhabited houses in ten years; while the ports of London, Liverpool, Hull, and Gloucester, with which it has canal communication (unfortunately far from perfect), have respectively increased by 22·6, 17·8, 29·6, and 21·2 per cent. in that time. It is thus easy to understand why the manufacturers of Wolverhampton should be among the first to insist on the direction of public attention to that artificial restriction of their facilities for cheap carriage from which the return of inhabited houses shows that they are suffering. Mr. Hickman says:—"Within the last year, Messrs. Griffin & Morris, of Wolverhampton, artificial manure makers, have set up works at Newport, South Wales" (Newport, we may remark, has grown by 30·4 per cent. in the ten years). "Mr. J. C. Major, manufacturing chemist, has started works near Hull" (increase of Hull, 29·6 per cent. in ten years) "The Chillington Iron Company, have set up galvanising works at Liverpool, and quite lately, the large firms of Morewood & Co., Eliza Tinsley & Co., and the Junction Nail Company, have decided to remove their extensive patent wrought-nail works altogether to near Newport, South Wales. In other cases, instead of the natural expansion of trade taking place here, the new works have been established near the sea, and so trade has either declined or has not increased in its natural ratio. The wire trade, once a great Birmingham manufacture, has left for Warrington and other more favoured places, and the iron-tube trade has been enormously developed on the Continent and Scotland, whilst here it has been nearly stationary."

The object of Mr. Hickman's paper was to point out the suicidal policy of the railway companies serving, or rather not serving, the Wolverhampton district. Into that we are not about now to enter, although we fully share the views expressed in the pamphlet Our object at present is rather to point out what is actually occurring, and to trace its

* Barford & Hewitt, Wolverhampton.

cause, than to suggest the remedy. What is now taking place, as far as accessible statistics show, over the greater part of industrial England, is this: Continental manufacturers, benefiting, no doubt, first, by English enterprise and invention, and secondly, by English tools and machinery, which they have purchased to the value of 92,000,000*l.* within the last ten years, are now running our manufacturers very hard in the foreign market. And not only so, but, incredible as it may seem, the railway companies are doing their best to help the foreigner to introduce his goods into the home English market, there to compete with English productions. Thus, at the present time, bright iron wire is carried *viâ* London from Antwerp to Birmingham for 17s. 4d. per ton; while, for carrying home-made wire of the same description, from Birmingham to London, 1*l.* 8s. 4d. per ton is charged by the railway companies. Nails are carried from Antwerp to Wolverhampton, *viâ* Harwich, for 16s. 4d. per ton, while from Wolverhampton to Harwich the railway companies charge 1*l.* 1s. 4d. per ton. So with sheet-iron, with iron girders, with plate glass; for all which, as well as for the difference in freights on English and on foreign railways, we refer the reader to Mr. Hickman's pamphlet.

We think it more than questionable whether these differential rates are legal. As to the ruinous character of this impolicy, first as affecting the inland manufacturing towns, and secondly, and in consequence, as sapping the very springs of railway traffic, there can be no doubt whatever. In the great displacement of the building activity which is now taking place in favour of the seaport and river-side towns, it is thus hardly to be questioned that the unfortunate policy of the English railway companies is a very potent factor.

This, then, is the outcome of the inquiry. The urban population of England and Wales is increasing at almost exactly double the rate of the rural population; the ratios for the ten years 1871-81 being respectively 17·5 and 8·3 per cent. The large towns are increasing at a much more rapid rate than the smaller ones, those containing fewer than 10,000 inhabitants hardly increasing at all. The seaport towns, and the seaside watering-places, are increasing at the expense of the inland towns, and in some cases with almost Transatlantic rapidity. And the railways, whose true interest it is to minister to an inland population, spread as much as possible over the country, are adopting modes of charge which tend to the paralysis of inland industry, and to the removal of manufactures from their inland seats to the seaboard; and, indeed, from the British Isles to the Continent of Europe. The tendency of the movement, which is going on at an accelerating rate, is to surround the island with a fringe of ports, towns, and villages, which would be exposed to destruction in the event of war, and to withdraw population, manufacture, and cultivation from the inland area of the island. The movement does not appear to us to be advantageous to the welfare of the country. But of its existence there is no doubt; and it is of no little importance, as well to the constructors as to the purchasers of houses, to have an accurate idea of what is really taking place.

The phenomena above indicated would be even more marked if, instead of inhabited houses, the comparison had been made of inhabitants. Thus Manchester, while increasing, as before shown, by six per cent. in ten years in the number of houses, actually declined, during that period, in the number of inhabitants, though Salford showed a very large increase.

A New Route from Sutton Coldfield to Lichfield.—The London and North-Western Line from Birmingham has hitherto stopped at Sutton, but on the 15th inst., an extension was opened from Sutton to Lichfield. The distance is 8¼ miles only, and the new route will provide the public with a short direct route, instead of the old roundabout way through Walsall. Mr. Evans, of Birmingham, is the contractor.

FRESH SUGGESTIONS ON THE GENESIS OF THE DORIC STYLE.

In a recent essay under the title "Der antike Ziegelbau und sein Einfluss auf den dorischen Stil,"* Dr. Dörpfeld throws out some new suggestions, partly derived from the excavations at Olympia, on the part which brick-building may be supposed to have had in laying the foundations from which the Doric style grew up.

As regards Egypt and Assyria, no one doubts the use of brick for building. It is enough to recall the Children of Israel and the Tower of Babel; but as regards Greece there has been a widespread idea that only walls which consist of solid masonry are properly Hellenic. When excavators have in the course of their work lighted on irregular masses of small stones or sun-burned bricks they have set them aside too often contemptuously as "comparatively late work." But recent excavations have tended to overcome this prejudice. At Hissarlik it has been shown that the Pergamos of Ilium was brick-built; at Mycenæ we have a brick wall of very ancient date; at Tiryns, at Olympia, at Tegea are still remains of brick walls whose size is considerable, and whose age indubitable. Naturally from these remains, few and scattered though they are, we conclude that had brick been a less perishable material we should have had evidence that the practice of brick building was widespread. Further evidence of the pre-existence of brick walls Dr. Dörpfeld gleans from the construction of the later stone walls. The normal stone temple wall had a basis of large slabs as a sort of foundation to the upper courses of the wall. For a brick wall this was of special service. Sun-burned brick, if in contact with the moisture of the earth, would soon rot away; it was necessary, therefore, to place a foundation course of stone, and the tradition was kept up by the large slabs long after the necessity had ceased. The very name "plinth" (πλίνθος) is a testimony to the original brick.

Again, the frames of the doors in Doric temples of quite late times (*e.g.* Parthenon) have been, it can be clearly shown, of wood overlaid for the most part with bronze. This, where the walls of the entrance were stone, seems unnecessary and inexplicable, but walls of brick would obviously need door-posts of some more solid material to resist the weight and swing of the door on its hinges. Finally, we have the evidence of modern times. Even in Athens, where stone abounds, the inferior kind of houses are still, for the most part, built of sun-dried bricks.

Dr. Dörpfeld next proceeds to reconstruct in the thought an ancient Doric temple of mixed wood and brick architecture. The walls of the naos are of brick, on stone foundations. The pronaos extending on one side is of the "templum in antis" form; it ends on either side with two short brick walls furnished with wooden antæ. Between these antæ are two wooden pillars, each standing on a stone basis. The two antæ and the two pillars support an architrave of wood. From side to side across the naos are placed beams of wood, the ends of which form the triglyphs. The roof superimposed on this was probably covered with clay and originally horizontal; later the invention of tiles made the sloping roof possible, and with the sloping roof came in, of course, the pedimental spaces. At Troy and Tiryns the roofs were of the horizontal scheme. If the naos were surrounded by a peripteros the pillars would be of wood on a stone basis, and the architrave also would be completely of wood. Such a compound structure would lead, we can readily see, to more substantial proportions than any mere building of wood only.

If buildings such as these were frequent, we must possess at least the stone foundations of something of the kind. Such a building was, in fact, laid bare by the excavations at Olympia, a temple consisting of naos and peripteros, with foundations of stone, with antæ and peripteral columns of wood, and with cella walls of brick,—the ancient Heraion, within the sacred Altis. Full details of this temple are not as yet available, but we know that it consisted of cella, with pronaos and opisthodomos, and peripteral columns; *in situ* are still preserved the stylobate of the peripteral columns, and a few scattered remains of many of the columns themselves, the wall of the cella of the pronaos and opisthodomos to about the height of one mètre, one drum of each of the two columns of the pronaos, and the stylobate of the interior columns. It is important to note what are the *missing parts*, viz., the whole of the outer architrave, the pillars of the cella, and the opisthodomos, and the upper part of the cella wall, and the whole roof. What is the obvious conclusion? In all the other purely stone buildings of Olympia traces at least of the existence of these architectural parts have been found. Only for the Heraion there are none. Why? The answer is simple: they were of wood and of clay, both perishable when exposed to the weather,—the pillar and architrave of wood, the top of the cella wall and the roof of clay. There is another curious point about the peripteral columns, some of whose drums remain. These were, of course, of stone; but, oddly enough, no two are exactly alike, their diameter, even the material of which they are made, and the style of their execution, vary in each case. One by one they have been substituted for the old wooden pillars as these fell into disrepair. In the time of Pausanias, just one of these old pillars was remaining; he saw it in the opisthodomos. There is still more circumstantial evidence as to the use of bricks. Within the precincts of the temple the excavators came upon a stratum of clay about 1 mètre deep, having no geological *raison d'être*. It can searcely be other than the clay which once formed the upper part of the cella walls. As soon as the wooden roof perished, and the rain beat upon the rough sun-dried bricks, they melted, and the walls fell to pieces. Had we stood in the Heraion with Pausanias, and seen the last wooden pillar, we should have caught the old temple in the very act, as it were, of translating itself from wood into stone; as it is, we have in the foundations of the temple which remain interesting data for settling the proportions of a temple that was originally a compound structure of wood and brick.

It is impossible to forget that it is this heap of ruined brickwork, melted by time back into soft clay, that has so tenderly preserved for us the rarest of the treasures of Olympia, the Hermes of Praxiteles.

* From the "Historische und Philologische Aut-sätze." Ernst Curtius Gewidmet.

NOTES.

The attention of unfortunate ratepayers at this season of the year is imperatively called to the enormous increase in the urban sanitary rates, which seems to have developed a fresh vigour since the completion of the Local Government Board Report for 1883-84. But even for that year the pressure of this particular item of expenditure, on a limited portion of the community, is far heavier than would appear from the general account of local impositions. The urban population of England and Wales in 1881 was 17,285,026; and if we deduct that of Greater London (4,764,312) it was 12,520,724. The rate of increase of the last decade, if continued, would raise this population to about 13,050,000 by the beginning of 1884. The urban sanitary rate for 1881-82 amounted to 9,084,721 for extra metropolitan districts alone. Since that time we have known instances of the increase of this rate by 55 per cent., and we apprehend that such cases are far from unique. On the urban population of 1881, the actual rate for that year shows a pressure of serious magnitude, while the rural sanitary rates only amounted to 242,486*l.*, charged upon 8,683,260 persons. If this rate of expenditure for professed sanitary purposes is to continue, and not only so, but also to increase, it can hardly fail to awaken a serious reaction against an amateur system which costs the country so notable a sum, while at the same time it has almost absolutely failed to secure the purity of

our rivers. As to the Thames, we need say nothing but that the Board of Works rate and the Local Management rate of the metropolis amount together to 2,390,749*l.*

THE case of Kempson *v.* The Great Western Railway Company, recently argued before the Railway Commissioners, is remarkable for the conflicting evidence brought forward. The applicants,—better known as T. & L. Jenkins, under which name they carry on business in Birmingham,—complained of being charged an excessive rate for the carriage of undamageable wire rods from Oakengates to Birmingham. The rate complained of was 5s. 10d. per ton, the applicants further stating that they were being charged an additional 2s. per ton for cartage in Birmingham, and that they also considered this charge exorbitant. As regards the latter point, the Company proved that they were charging the same as the waterway carriers, and further, that it cost them 3s. per ton to deliver ordinary traffic conveyed at rates including delivery. But on points involved in the main question the Commissioners have to decide upon widely-differing testimony. The Great Western Company's statement of the manner in which the rate was made up included 6d. per ton for loading into the trucks at Oakengates, and a similar amount for unloading at Birmingham; and they called the chief officials of several lines to prove that the actual cost was 5¼d., and that in many cases 7d. was charged, and considered reasonable. On the other hand, the applicants' witnesses stated that it could be done for from 2d. to 2½d., and the Commissioners not unnaturally took time to consider the matter, and reserved their judgment. In view of the now well-known fact that the companies intend to apply for new Parliamentary powers in regard to rates next session, it is certainly a bold thing in Messrs. Jenkins to open up this question, and the result will be eagerly looked for both by the railway companies and the trading public.

AT the meeting of the School Board for London last week, Professor Gladstone brought forward a report from a special committee on technical education. The committee was appointed two years ago to consider how far the Board could facilitate technical education. Among other recommendations the committee submitted the following:—"That the instruction in drawing commence with Standard I., and be carried out according to a graduated scheme laid down for each standard; and that increased attention be paid to freehand-drawing from models in all schools, and that mechanical drawing and modelling in clay be introduced into certain schools; and that, as an experiment, arrangements be made for the establishment of a class for the elementary instruction of boys in the use of tools as applied to working in wood, the attendance being voluntary and out of school hours." The two first-named were carried, we are glad to observe, by a very large majority. In thus bringing in drawing and modelling as an integral part of primary education, the Board have taken a step which may have larger results in the future than they are even able to anticipate at present, and they have probably done more to render the teaching of their schools a true "education" in bringing out faculties at once of mind and body, than by any enactment they have made for a long time past, besides investing the school teaching, to many children we may hope, with a new feature of interest and attractiveness.

AT the close of this year Mr. Robson will cease to occupy his position as Architect and Surveyor to the School Board. The post will now be divided; Mr. J. T. Bailey being appointed "Architect" at a salary of 600*l.* rising by annual steps to 900*l.*, and Mr. Andrew Young has been appointed "Surveyor" at a salary of 500*l.* Both have been working for many years in the department under Mr. Robson, and the Board have done wisely in appointing those who are conversant with the work and who will carry it on, we may presume, in the same spirit. Mr. Robson may claim to have placed school planning on a scientific basis, besides having come very near to evolving a School Board style of architecture. Of course on this latter point (*de gustibus*) opinions may be divided, but the result has been generally satisfactory.

A POINT which appears to have been overlooked with regard to the recent sale of Staple Inn, Holborn, is that the precinct of the Inn is extra-parochial, and is in consequence exempt from local taxation. The Temple, Gray's Inn, Furnival's Inn, Clement's Inn, Dane's Inn, and Barnard's Inn, are also similarly exempt. It is difficult, at the present time, to recognise the justice of exempting these places from all contribution to the local rates, but the exemption has been accepted by the local authorities, and maintained by the Legislature up to to-day. There has been a fiction that the societies to whom these Inns belong performed some services with regard to legal education, and on this ground their property has been hitherto considered to be entitled to be excused from payment of parochial imposts. It will be a matter for consideration whether, on a society being dissolved, and their property alienated, the ground which was formerly the property of the society still remains extra-parochial, and if it should be held that it still remains unparochial, whether steps should not be taken to subject the property to the control of the municipal authorities, and to compel the owners to contribute their proper quota to local taxation. Staple Inn is included within the metropolis by the 250th section of the Metropolis Local Management Act, 18 & 19 Vict., c. 120, but is expressly exempted from the operation of the Amendment Act of 1878, 41 & 42 Vict., c. 32. The reason for this vacillation on the part of the Legislature is not clear.

IT is to be hoped that the attention which has recently been drawn to the subject of noises in London may not only produce some practical results in regard to railway whistles, but also with reference to street bands and church bells. There is no question that any householder or lodger should have a power of ordering a band entirely out of his hearing, and not merely the power of removing it further from the house. As to church bells it may also be hoped that well-meaning people will no longer waste money by placing bells in churches in town, to the great annoyance of dwellers in the neighbourhood, and without any useful result. Every one knows that the original object of church bells was to summon those from a distance to prayer who had no other means of knowing the time, and even now in country districts such bells are not without their use. But in towns not only are they of no use, but they are a positive evil to the inhabitants of a district. At certain hours, for example, the houses close to St. Mary Abbot's, Kensington, are almost uninhabitable, and yet a large sum was spent in putting up this peal of bells and a clock with a chime and without a face. In the leading case of Soltau *v.* De Held it was decided that bells close to a house were an actionable nuisance, and there is no doubt that Kensington Church bells are only allowed by the good nature of the Kensingtonians.

WE have before us the Journal of "The National Society for Preserving the Memorials of the Dead in the Churches and Churchyards of Great Britain,"—a society which has so excellent an aim that, in spite of the length of its title, we wish it all success. The neglect and wanton destruction of old monuments is not, indeed, a vice peculiar to the present day. Weever, writing in 1613, lamented that his contemporaries regarded them with as little interest "as the parynges of their nayles," and the evil must have grown to a great height when it called forth a Royal proclamation in the second year of Queen Elizabeth's reign. Penalties were therein imposed upon any future offenders, and recent despoilers were commanded either to make good the damage done, or, if unable, "to do open penaunce two or three tymes in the church, as to the qualitie of the cryme and partie belongeth, under payne of excommunication." How the spirit of mischief had been evoked is plain from the terms of the same proclamation, viz., from the licence given (or taken) in past times "to deface monuments of idolatry, and false fayned images in churches and abbeys." But the spirit once raised has never since been laid, and the Society's record shows that it is now as active as ever. One correspondent, writing from Northamptonshire, tells of a fine old font broken up, not long ago, to mend the roads. Another relates how, in the rebuilding of Cheam Church, old brasses were recklessly torn from their slabs, and one, the finest of the set, was subsequently found in a shed in the rector's yard. Croyland Abbey was for many years treated as a local quarry, and the beautiful Bracebridge effigies in Kingsbury Church are gradually, like those whom they commemorated, becoming dust. It may be well to note that by the statute 24 & 25 Vict., cap. 97, sec. 39, it is enacted that any person who shall "unlawfully and maliciously destroy or damage any monument or memorial of the dead," either in church, chapel, meeting-honse, or burial-ground, shall be guilty of a misdemeanour and liable to six months' imprisonment.

THE Lower Thames Valley Main Sewerage Board met on Saturday last at Kingston to consider two schemes reported on by the Works and Parliamentary Committee with reference to the drainage of the united district, those of Mr. Shields and Sir Joseph Bazalgette. The former proposed the collection of the sewage on land in the parishes of Twickenham and Isleworth, its defœcation by the scheme of Messrs. Mansergh & Mellis, and the running of the effluent into the Thames about three-quarters of a mile below Richmond Bridge: estimated cost, 329,550*l.* The latter proposed the total diversion of all the sewage of the district to land at Crossness, which the proprietors have to sell to the Board, with two pumping stations, one at Mortlake to lift the sewage from the low-lying land at Barnes; the other at Sutton to send the sewage by gravitation on to the land at Crossness: estimated cost, 563,711*l.* The committee rightly put the question of economy on one side; whether they did rightly in accepting the Crossness scheme is another question. They characterise it as more expensive at the outset, but "final." The transport of the London sewage to Barking was thought to be "final" also.

IN the recently-published "Croker Papers" there is a rather curious discussion between Sir Robert Peel and the ex-Secretary to the Admiralty upon the appropriateness of battlements in a Renaissance mansion. Sir Robert was (in 1832) building Drayton Manor, and Mr. Croker urged him to cap his walls with battlements. Peel, however, found time in the midst of Reform agitation to look carefully into the matter, and to come to the confident conclusion that neither battlements nor labelled windows would be in character with the style of his house. "The parapet or ornamented balustrade," he writes, "was in use in the time of Elizabeth and James, and not the battlement. The battlement was of an earlier date." He then mentions the best extant examples of the period, and adds "there is scarcely a window in one of the houses named with a label. There is not one where the course is so near the top of the window, as it is in mine." Croker still contested the points, and though he preferred "to rest the battlements on beauty" rather than authorities, maintained that he had the support of the latter for the use of labels above all the windows not protected by string-courses. Sir Robert Peel was not a man likely to give way upon a question of taste, and at a later period spoke out pretty plainly upon the selection of Matthew Wyatt,—"a bad architect and worse sculptor,"—for the Duke of Wellington's unfortunate equestrian statue. He denounced it as a job and an evil precedent,—"a retro-active precedent, if such a thing can be, justifying the selection of Wilkins for the National Gallery, of Soane for this folly, and Nash for that, and every job which immortalises its own disgrace from the durable materials in which it is recorded."

ALTHOUGH as an illuminating power the electric light at the Law Courts seems satisfactory enough, yet it is anything but satisfactory to find that the noise of the engines beneath the central hall is perfectly perceptible, and that their vibration extends even to some of the courts. This in itself is not only disagreeable, but is trying to the nervous systems of men who spend so much time in courts, and often at considerable mental and physical tension. The cracks in the tesselated pavement of the Central Hall are sad to behold, and the effect of the vibration of the engines beneath is likely to have a still further harmful effect.

THE collection of works by Mr. J. D. Linton, now open at the Fine Art Society's Gallery, is of special interest as giving to the public for the first time the opportunity of seeing his fine large paintings of the "Life of a Soldier in the Sixteenth Century" simultaneously and hung in their proper order. We have commented on all of them as they successively appeared at the Royal Academy and elsewhere, and are glad to meet them again in a collective form, though they are not all of quite equal interest or success; the one representing the reception of the keys of the conquered city is decidedly weak in comparison with the others. "The Benediction" is the finest and most serious in feeling, the "Declaration of War" the most characteristic and spirited. Mr. Linton, however, is greater in water-colour than in oil. His finest work, in colour and general execution, is, perhaps, "Admonition," where a group of amorous revellers are rebuked by the authority of the Church in all its array of ecclesiastical properties. The manner in which detail has been studied in this work is exemplified in the sit of the robes upon the figure of the bishop; they are so stiff with gold and embroidery that they stand out from his figure instead of falling over it. One of the finest pieces of character is "Gil Blas" at the Tavern, which is an absolute realisation of the scene. In regard to rich and harmonious colour the exhibition is a kind of feast to the eye such as no other living English artist, perhaps, could give us.

WE greatly regret to hear that the present proprietors of the remarkable and picturesque building at Aberystwith, which Mr. Seddon long ago designed as a hotel, and which, in its incompleted state, ultimately became a college, are about to entrust its completion to another hand than that of the original architect. Such a proceeding on the part of educated men seems quite incomprehensible. The building, as designed, was a very fine and original architectural conception, and that its designer should have waited all these years only to see its completion taken from his hands and given to another, is an injustice on which we cannot but express our feeling very strongly.

MESSRS. DOWDESWELL have formed a small exhibition of beauties of Sussex scenery, by Mr. Sutton Palmer, which, without touching the highest mark, contains some very charming bits of landscape.

A NEW paper, entitled *The Plumbing and Decorating Chronicle*, of which the first number has been sent to us, appears to promise to be a useful, practical paper, so far as the plumbing portion is concerned. The atrocious coloured plate, which is given as a specimen of "sign-writing," seems to emphasise the fact that "plumbing and decorating," so long associated as trades, have no connexion whatever in the nature of things, and had better dissolve partnership as soon as possible, both in journalism and in practice.

WE have received an announcement of a proposal which, if carried out in accordance with the terms of the prospectus, ought to be of some importance to architects, builders, and patentees of building appliances. It is no less than to collect under one roof "a registry of everything worth knowing and seeing in architectural appliances, to be accompanied by an exhibit of the article where possible, or by an illustration or model." Of course something in this way has been done for some years back in the Museum of Building Appliances in Conduit-street, the range of which, however, has been rather limited. Mr. Phillips, decorative artist, of Baker-street, who is projecting the scheme, is erecting a building for the purpose. He will require a large one.

IN the matter of Westminster Hall, *bos locutus est*, that is to say, Sir Edmund Beckett has written to the *Times*. After that, of course, no more need be said; we are under infallible guidance. Seriously, Sir Edmund Beckett's letter is in matter (we say nothing of manner) a very sensible and practical one; but every suggestion and criticism in it has already been made in our columns, except that of setting up temporary models of the various schemes, to see how they look,—a procedure which is really only necessary to convince dunces, and probably will fail of that aim. The epistle includes an advertisement of "My 'Book on Building,'" and the usual insults, coupled with a pat on the back for Mr. Ayrton as "the cleverest Commissioner of Works there has ever been." It is natural that Sir E. Beckett should have a kind of fellow-feeling for the only man who has rivalled him in gratuitous and absurd insolence to the whole architectural profession.

A CORNER OF WILTSHIRE.*

SOME two miles away from Bradford, towards the south-west, lies Westwood, where there is a church that will well repay investigation. Mr. E. A. Freeman has called its tower "wildish,"—a curious epithet, throwing more light, perhaps, on the character of him who uses it than on that of the tower itself. It is, in fact, a square tower with an octagonal stair-turret projecting from the south-east angle. The two lower stages are perfectly plain (except for door and window), while the belfry stage is enriched with simple panelling, which makes the complete circuit of the tower and turret. Above this is a panelled parapet, with enriched pinnacles at the three corners not occupied by the stair-turret. The whole design is extremely simple and bold, and compares favourably with the intricacy of many of the Somersetshire towers. The body of the church is Perpendicular, of a vigorous and pleasing type, particularly in the north aisle or chapel, but in the internal arcade (of two bays) this vigour degenerates into coarseness. It is really a relief to come across something that one can justly condemn in old work. So much trouble has been taken to impress upon our youthful minds that all old work is good, and that everything previous to, say 1530, is worth sketching; that it is a positive pleasure to find something to carp at, something to prove that the old artists, like ourselves, were men and fallible, and that they did not always tread the icy heights of perfection. Not less gratifying is it to find work of a date subsequent to the magic year of 1530 which one may honestly admire, and of which the excellencies can be proved by appeals to accepted canons of art. This classifying of the merit of work according to date, this criticism by periods, is very apt to run us into absurdities. It was no less ridiculous for our grandfathers to dismiss the consideration of many ancient buildings with the contemptuous summary that they were "barbarous Gothic," than it is for us to put a vast array of beautiful structures out of court by designating them as "beastly Classic things." The excellence of a work lies in its own intrinsic merits, and not in the style in which it is wrought. No doubt a greater number of excellent things are found in some phases of style than in others; but it is absurd to deny all beauty to a work because it happens to belong to a particular period of art.

Westwood Church offers work of two periods principally, pre-Reformation and post-Reformation. The former period saw most of the work completed. To the latter belong the pulpit, the chancel-screen, and a curious corbel at the side of the tower arch (see fig. 5 in illustrations given last week, p. 819). It clearly represents the arch-fiend himself, into whose mouth, with hardy humour, the artist has transferred the Apostolic declaration that if he is resisted he will flee. "Resist me, and I will flee," is written in seventeenth-century characters beneath his effigy. He is represented as an abnormal variety of the genus *vespertilio*, though why bats should be considered as peculiarly like devils it is difficult to determine, unless it may be that they loiter about at dusk, and attend church in a very irregular manner. In addition to the features already noticed, there is a handsome panelled roof over part of the north aisle, while a few old pews, with Flamboyant tracery, are left in the chancel. But some of the most interesting work is the stained glass in the chancel windows. This is very vivid in colour, so much so as to give the impression of being modern, but examination shows it to be ancient. It has been rearranged, and in one light includes a piece of seventeenth-century glass, probably brought from the ruins of the neighbouring castle of Farleigh. The whole glass has to do with the Passion. In the central light of the east window is the Crucifixion; in all the others are angels bearing shields charged with instruments of the Passion. The seventeenth-century glass already alluded to is an oval, containing a charming miniature of the Crucifixion. The whole series is of unusual interest, and will bear a lengthened examination.

Continuing the walk from Westwood the traveller will presently find himself descending a steep hill towards a little brook and the village of Farleigh. The brook marks the boundary between Wiltshire and Somerset. On the further bank,—everywhere steep and in places precipitous,—stands the Castle of Farleigh-Hungerford. It stands,—or rather it stood there,—for there is but little of it left. It belonged to the powerful family of Hungerford, the same whom we have already seen establishing Long Thomas at Wraxall. The Hungerfords were one of those extensive and powerful families whose chiefs held the happiness of thousands in their hands, but who are now extinct; like the Coverts, of Sussex, whose possessions are said to have extended from London to the sea, and who built one of the finest mansions bequeathed to us by John Thorpe, but of which only a few fragments remain at this day. The Hungerfords held much land in Somerset, and not a little in almost every parish of Wilts. Their stronghold was here at Farleigh. From the frowning gateway, guarded by a drawbridge, but without portcullis, their army of retainers clanked up the hill on their way to Agincourt. In later times the grey walls, sparkling with Renaissance ornament, looked down on the messenger who brought Cromwell's letter to "my honoured friend Mr. Hungerford, the elder, at his house," the father of the last Hungerford whom the castle knew as its master.

The changes of the centuries are all recorded in the little Chapel of St. Leonard, still standing within the ruined walls. They are written in stern and vigorous characters, in chain-mail, and plate-armour, in sword and spear of every beautiful and deadly shape; in the pithy incised slab of the fifteenth century, and the wordy epitaphs of the seventeenth. They speak to us in broken accents from coloured windows, and in the clearer, more embellished language of the Jacobean reredos and pulpit. Not the least eloquent of these mute voices are those of the holy-water stoup, and the candles and crucifix left on the mouldering altar, as though forgotten there when the Romish priest bowed his last bow, and the breath of the monotonous chant for the last time stirred the pennons yet hanging from the roof, blazoned with arms of Hungerford and its allies.

Of all the beautiful things, broken or whole, which this once sacred building preserves, the most fascinating are the weapons of war (fig. 6). It is curious to see how much beauty was bestowed on things that were meant to do nothing but harm to all but the possessor. The lovely curves of the spear-heads, the delicate tracery of the sword-hilts, remind one of the horrible beauty of a snake. One can well understand Claudio going ten miles on foot to see a good armour, and Benedick's regret at his afterwards preferring to carve the fashion of a new doublet. But it would never do for young artists now-a-days to settle their differences with such swords, for they would be so wrapped in admiration of each other's weapons as to forget their cause of quarrel. Important, however, as is the part which the sword and spear played in the history of the Hungerfords, they by no means ignored the pruning-hook, or

* See p. 819, *ante*.

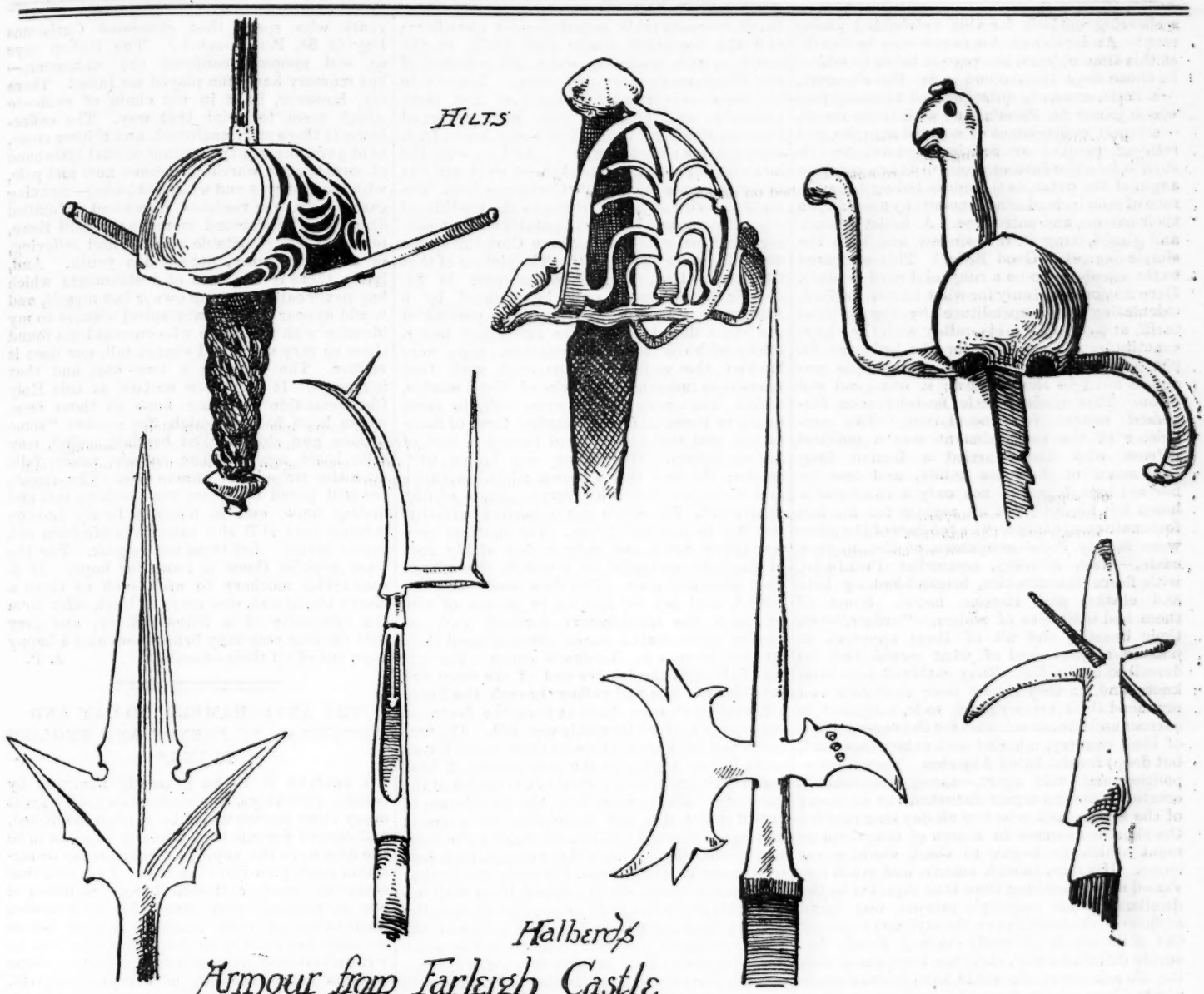


Fig. 6.

rather reaping-hook, for it was their crest. Either alone or in conjunction with the garb, or sheaf of corn, it appears at every opportunity,—in glass, on tombs and pennons, and very ingeniously in a lock plate, where the garb forms the key-hole, and is supported on each side by a sickle (fig. 7).

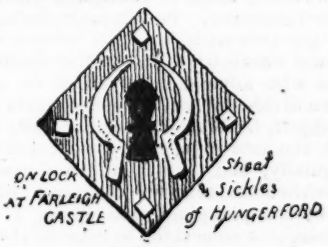


Fig. 7.

This chapel of St. Leonard is the focus of the interest at Farleigh. The remains of the castle walls contain no detail of any account, and, though perhaps fascinating to the day-dreamer, give little return to the student of architecture. The day-dreamer can picture to himself the long array of knights and ladies who have lived and laughed and loved here, and some of whom still lie in their leaden coffins in the chapel vault. He may fancy he can descry old Sir Walter, who was long unjustly credited with having captured the Duke of Orleans at Agincourt; or perhaps he will hear the wails of the unhappy lady, third wife to another Walter, who lay immured in one of the towers for three or four years, kept there by her cruel husband, and subjected to the poisonous wiles of his chaplain; receiving her food from the hands of my lord's fool, and sometimes surreptitiously relieved at midnight by the pitying peasants. Poor lady! her lot was a hard one, till her wicked husband lost his head on Tower Hill; but then she returned again to life and to love, and, marrying Sir Robert Throckmorton, of Coughton, in Warwickshire, became the mother of the mother of that Francis Tresham who was to perish miserably in the Tower with his fair fame shattered by his complicity in the Gunpowder Plot. Alas, for the old days, when to blow up the Houses of Parliament was such a monstrous affair as to give birth to a national festival in honour of the providential escape! Nowadays we have a potential Fifth of November almost every month.

One year after the head of the wicked Bluebeard, Lord Hungerford, fell upon Tower-hill, the same sad place saw the death of another native of Farleigh Castle, Margaret, Countess of Salisbury, and mother of Cardinal Pole. She was born here in 1473, while the castle belonged to her father, the Duke of Clarence, brother of Richard III., who confiscated the place and gave it to the Duke. The unfortunate Countess had not even the satisfaction of lying in her own beautiful chapel at Christchurch, in Hampshire, which she had built expressly to receive her mortal remains; and that charming little structure, on whose carved strings the Renaissance has laid a firm hold, has remained tenantless and silent down to the present day.

Yet one more romantic figure will cross the day-dreamer's misty vision. Napoleon, afterwards the third of that name, once went to Farleigh and sketched the ruins of one of the towers. Whether he wielded the pencil to as little purpose as the sceptre and the sword cannot be said. But none of the rusty weapons hanging in St. Leonard's Chapel could tell so sad, so humiliating a tale, as could that which was delivered up by the imperial sketcher on the field of Sedan.

Alexandra Palace.—A communication has been received from the Board of Trade certifying that the Exhibition to be held next year at the Alexandra Palace is an International Exhibition.

A SEASONABLE REMINISCENCE.

BY A LONDON ARCHITECT.

IN good Bishop Butler's discourse upon Personal Identity, there is a passage which has always been a stumbling-block to the present writer. It runs thus: "Upon comparing the consciousness of one's self or one's own existence in any two moments there as immediately rises to the mind the idea of personal identity. Or, in other words, by reflecting upon that which is myself now and that which was myself twenty years ago, I discern that they are not two, but one and the same self." Whereto, my lord, we most respectfully demur, discerning nothing of the kind. I look back through a long series of Christmas-tides and try to fix the image of myself at each successive stage in life's journey, and as the pictures present themselves before me, I am not at all sensible of that affinity between them and my present self which the good bishop thought so convincingly clear. I look *into* my self, I can only look *at* the mental pictures of the other personages who at one time bore my name. Portraits of friends arise in my imagination equally well defined, and bear as close a relation to what I now am as those other portraits which are supposed to be indeed my very self. What, for instance, is there now in common between me and that youth who in the year eighteen hundred and what-you-please came friendless to this great city with a light purse and a heavy heart. His story is known to me, it is true, but so are many similar stories of others. He had left the office of a North-country architect of declining practice, with the accumulated arrears of a small salary paid partly in cash and partly in promises, the latter never redeemed, and the former, the actual and tangible portion, by far the smaller of the two. A great war had paralysed the peaceful commerce of the country, and building was almost at a standstill. Not

a cheering outlook for this unfriended young man! An incident in his career may be worth, at this time of year, the page it takes to relate. In those days there stood in St. Peter's-court, —a little, crooked, unfrequented thoroughfare which joined St. Peter's-lane with Duke-street, —a lonely coffee-house of a faded exterior and retiring habits; so retiring, indeed, that it shrank into the furthest point of the re-entering angle of the court, as though in hiding from the race of men instead of advancing any claims upon their custom and patronage. A tablet, framed and glazed, hung in the window and bore the simple legend, "Good Beds." This appeared to the wanderer to be a congenial resting-place. Here he could call only for what he could afford, calculating the expenditure by the printed tariff, and regulating his outlay with the nicest exactitude. The charge for the bed was 1s. per night, and it justified the simple announcement in the window; it was good and clean. This modest little hostelry soon furnished matter for speculation. The proprietor of the establishment was a political refugee who had married a buxom Englishwoman of business habits, and had by her aid got together not only a comfortable home for himself, but an asylum for his less fortunate compatriots. The *habitués* of the place were mostly Polish gentlemen, of the military caste, — tall, swarthy, somewhat Pistol-like, with fierce moustachios, brigand-looking hats and cloaks, and Hessian boots. Some of them had little bits of ribbon,—"orders,"—on their breasts, and all of them appeared to possess a good deal of what would now be described as "side." They gathered into little knots, and, as they sipped their chocolate and munched their crisp French rolls, discussed in earnest undertones schemes for the regeneration of their country, mingled with curses (not loud, but deep) for the hated Austrian. They were,—politics and war apart,—tame, gentlemanly creatures, and no orgies disturbed the slumbers of the tired youth who had all day long plodded the cheerless streets in search of that employment which he began to think would never come. His fare, though scanty, and much less varied and nourishing than that supplied to the dwellers in her majesty's prisons, was found sufficient. But with even the strictest economy the little stock of ready-money slowly but surely dribbled away, carrying hope along with it. To ask for credit would have been to precipitate his expulsion from the only place where he could lay his head. And yet something must be done. Now the shops in St. Peter's-court are peculiar. There is an umbrella-maker's at one corner with a red umbrella hanging out, as if to dry, over the door; and in the window facing the court there is a collection of walking-canes of amazing lustre and magnificence. There is a boot-maker's, a tobacconist's, a French laundress's, — the prettiest establishment of all,—where you can see the tidy French girls in their muslin aprons and crimped caps laughing and joking as they iron all day long the snow-white linen; there are a picture-frame maker's and a public-house, and there are whole rows of second-hand book shops, curiosity shops, and shops to loiter over generally. Loitering can be done in the seclusion of St. Peter's-court, and it cannot be done in the throng of St. Peter's-lane from which it leads. But, better than all, there stands, or stood, at the corner opposite to the display of gorgeous walking-canes, a diamond merchant's, —for so he is described on the frieze over his brilliant shop-window,—who was so good as to lend the youth at this crisis in his career the sum of two pounds, kindly taking care at the same time of his case of instruments, which might, you see, have been stolen if left about at his lodgings.

With this sudden addition to his capital, he felt almost independent, and began, with renewed energy, his search for work. As the last golden piece melted slowly away, and with the prospect of employment as far off as ever, the jolly Christmas-tide came on. It was the first he had spent in London, and the glitter and bustle of the streets dazzled him, and in the general excitement he almost forgot his own troubles. It seemed impossible that want could be at hand with plenty all around. The Christmas was cold and wet, and he kept indoors. It was not a time to expect an engagement, and he had learned already to shun the "walk that costs a meal." The coffee-house was not licensed for the sale of intoxicating drinks, and the season brought no new customers, who found more suitable entertainment elsewhere; and the increased bustle and traffic in the court outside made the quiet and isolation of the dingy room more depressing. Letters to his previous employer brought at first more promises, and after a time were returned through the Dead Letter Office, and hopes from that quarter were at an end. And so, with the last crown-piece in his pocket, he went early to bed on an ever memorable Christmas Eve. The waiter,—with an eye perhaps to the traditional "box,"—waylaid him on the stairs in the morning, and wished him a *Merry* Christmas,—no doubt in perfect good faith. The picture of that Christmas Day, in the coffee-room in St. Peter's-court, could only be painted by a Rubens or a Vandyck. Everything partook of the same dull brown. The mahogany boxes, sticky with the steam of countless chops, were brown; the walls were papered with that monstrous imitation of blocks of Siena marble, which was once, and is even still, in some quarters thought an appropriate form of decoration, and the varnish had turned a sort of bilious brown. The ceiling was brown with smoke; the floor had a brown oilcloth over it; and a brown fog filled every corner of the apartment. The whole was in perfect harmony, but *not* in a cheerful key. The shutters were not taken down, and only a few sickly rays of daylight straggled in through the glazed sash over the door. The door itself was unbolted, and one by one, or in groups of two or three, the conspirators entered, and, assuming their wonted places, recommenced their endless labours in freedom's cause. The gas was lighted at the further end of the room and was burning dim and yellow through the foggy air, casting strange shadows from the fantastic figures upon which its sickly rays fell. The fireplace had been obliterated to make room for an extra box or stall, and the only source of heat was a little stove which stood in the centre of the gangway. The visitors were too considerate to crowd round this and monopolise its warmth, and so sat cloaked and hatted through the long, long, dismal day. They did not change their fare on account of the season, although the English instincts of the landlady pressed them with appropriate delicacies, and bestowed gratis upon the solitary stranger within her gates a slice of the traditional plum pudding. Silently and by small detachments as they had entered, these strange men departed early, while the bells were still ringing the evening worshippers to St. Peter's Church close by. The gas was partly turned out as being a wasteful excess of illumination for a single customer. The inestimable solace of the pipe was not then so much popularised as now. He tried to read some of the greasy and torn novels upon the shelves, the remnant of some old-world circulating library, but his mind was absent, and he followed the lines without catching their meaning; and so he sought once more forgetfulness in that sweet sleep which waits benignly upon the young.

We know that in the mimic world of the stage it is only when the innocent prisoner has actually mounted the scaffold, and has obligingly adjusted his toilet for the executioner, who stands ready, axe in hand, that the horseman dashes up, breathless and incoherent, with the despaired-of reprieve; and that in polite fiction it is not until the hero's finances are, so to speak, at the last gasp, that the Will is found, or the aunt, relenting, dies, and, regardless of all customary formalities, cash is instantly abundant; or the rich old uncle, with his rug and hat-box, appears unannounced in the drawing-room, in the very nick of time, fresh from the wealth-giving Indies; and we in our innocence suppose that it is only in the realms of fiction that things turn out thus *à propos*. Not at all. The Universe is under governance.

Within a week a letter from a stranger, now a prosperous gentleman,—a F.R.I.B.A. even,—directed the youth to present himself to an architect (who is now the surveyor-general of a distant colony), where work awaited him. He did so, and instantly became rich with the wealth of 30s. a week. Both these Samaritans, if they should read this, will recall the circumstances.

And now, as I sit in my cosy study-chair, my feet slowly toasting on the fender, writing lazily on the pad upon my knee, the lamp burning brightly and the curtains drawn, Mrs. P. busy with her knitting, and the voices of happy children heard from the "hall," which they are decking with holly, I ask myself, incredulously, am I indeed one and the self-same as the youth who spent that gruesome Christmas Day in St. Peter's-court? The Bishop says so, and memory confirms the statement,—but memory has often played me false! There are, however, links in the chain of evidence which seem to point that way. The coffee-house is there still, unaltered, and thither come, as of yore, the scanty remnant of that little band of expatriated warriors,—gaunt now and pale, with bleared eyes and whitened locks,—moaning garrulously over vanished hopes and unfulfilled desires. The diamond merchant is still there, pursuing his charitable mission, and relieving, in a double sense, necessitous youth. And, lastly, there is the case of instruments which has never called any one owner but myself, and would appear to be a substantial witness to my identity with the youth who once at least found them so very useful. I cannot tell, nor does it matter. The story is a true one, and that is enough. It has been written at this Holy Christmas-tide to bring hope to those from whom hope has well-nigh fled;—that "some forlorn and shipwrecked brother, seeing, may take heart again." The curtain never falls upon the tragedy of human life. The streets are still paced by weary feet seeking rest and finding none, and in many a lonely London lodging care still sits eating the life from out young hearts. Let them not despair. For the least hopeful there is room for hope. If it sound like mockery to wish such as these a Merry Christmas, one may, at least, offer them the sympathy of a fellow-sufferer, and pray that the new year may bring them also a happy issue out of all their afflictions. J. P.

THE ANTECHAMBER, TO-DAY AND YESTERDAY, IN FRENCH AND ENGLISH PLANS.*

I believe it to be generally admitted by editors, publishers, and booksellers that a great many more papers would be written, published, and offered for sale than actually happens to be the case were the supply of subjects for dissertation more plentiful than it is. I am told that there are even gentlemen living,—members of our profession,—who have early in a session undertaken to read nameless papers before societies like ours in the hope that a subject to write about may, as a matter of necessity, occur to them before the day of execution arrives. But in my case, I determined upon a subject, and invented a title, before ascertaining whether there was much or indeed anything to write thereon. That title runs smoothly enough: "The Antechamber, to-day and yesterday, in French and English Plans," and if you hold me to it, without mercy, my task will be soon accomplished, for an antechamber is merely the *amphithalamos* of Vitruvius's Grecian house, and in both the French and English distribution of a dwelling-house is that piece which is *ante* to a bed-chamber. Permit me therefore to play upon my title with just that licence accorded to those earnest expounders of inspired sentences who admonish us twice on Sundays. Let me divide the text into three parts, and put my subject, Cerberus-like, under three heads, in which the ante-room shall be treated literally, colloquially, and then broadly and generally in the architectural sense of *vestibulum* and *atrium*. But before plunging into space, I want a beginning,—a something to connect the subject with current topics,—and I am reminded that the country is at present in the full enjoyment of a centenary; that this day, one hundred years ago, less a few hours, a great English lexicographer was buried in Westminster Abbey amidst the respect and gratitude of the nation; and so, as in writing a paper or a poem, there is "nothing so difficult as a beginning, ... unless perhaps the end," I will begin at once, and with another quotation.

"Seven years, my lord, have now passed since I waited in your outward rooms, or was repulsed from your door." Surely not the very youngest member of this excellent Association ignores the incident which served to put those words into a letter addressed by Dr. Johnson to the fourth Earl of Chesterfield. The scene has been depicted by artists, has been mentally portrayed by thousands of James Boswell's readers, without, perhaps, a thought of the house in which the event happened. Indeed, it was only a few weeks ago that I

* A paper by Mr. William H. White (Secretary of the Royal Institute of British Architects), read before the Architectural Association on the 19th inst.

asked myself whether the house at the end of Stanhope-street, Mayfair, was really that in which Dr. Johnson "did antechamber," or that I doubted whether the outward rooms of a peer in the days of George II. could be other than stately pieces. Have we not all seen pictures of a vast antechamber or vestibule crowded with aspirants more or less motley, with the gloomy Doctor seated uneasily, leaning on a clumsy stick, and frowning at Lord Chesterfield's back, after he had passed with a troop of friends, and paid no heed to clients anxiously searching for a patron. But, gentlemen, on the wall is a plan of Chesterfield House, taken from the "Vitruvius Britannicus" (ed. 1767, vol. iv., plates 67, 68, 69), and there at the door you will see very little room for an assemblage such as I have described. A hall chair and table, two or three flunkeys, and my lord's gracious presence, would have effectually blocked that entrance passage, which merely forms part of the principal staircase to the house itself. There is nothing in that Mayfair residence of an English nobleman which fulfils the idea of an antechamber such as Charles II. brought to Whitehall from France, such as, 200 years ago, Italian and French architects made an important feature in their distribution of rooms, in a house or a palace, or such as, 130 years ago, J F. Blondel discoursed of in Paris to the students of his school of arts, a short time before he became a professor of the Royal Academy of Architecture.

The antechamber is famous in history, and, perhaps, more than any other part of a house, its existence has helped to make history. Mackintosh and Macaulay repeatedly use the term, which to Fielding and Addison was familiar, and Dr. Johnson has warned us that it should be spelt with an *e*,—not an *i*, as the Dictionary of the French Academy still has it. Gibbon has much to tell of the Roman antechambers, and Cicero of the clients who waited in them. The ancient fashion of waiting in the early morning at a great man's door to attend his levee, or, in the vernacular, his getting-up, has survived even to the present day in Paris. In the age of Louis XIV. it formed a part of the stately manner, as it is possible to picture it from the stately phraseology, of the time. If Pliny left home before sunrise to pay his respects to Vespasian, there were historians in the antechamber of Louis hours before the eyes of his most Christian Majesty were opened; and, during the Second Empire, a well-known minister of Napoléon III. received people of business at half-past seven in the morning in his dressing-room, which served as an antechamber. Indeed, the custom of early visiting on matters of business is very general among Parisians, the mass of whom are at work an hour after daybreak. If you had business with Viollet-le-Duc it was necessary to call on him before nine a.m., and I have found his library full of different kinds of visitors at eight o'clock. In this country the levee,* which, as a formal homage to the Sovereign, is identical with classical precedents, takes place in the afternoon, and, therefore, as far as the meaning of the word goes, is a misnomer. In the time of the Louis' there was the great and the petty "getting-up in the morning," and the pictures of such events extant are curiously interesting; for the bedchamber of the last century and of the one previous to it, rather resembled a modern drawing-room than a bedroom as we understand it now, and the antechamber which led into it was usually a luxuriously furnished apartment, preceded often by a smaller room, called the first antechamber, in which the servants waited.

There is nothing supremely elevating in the subject of an antechamber, or of the conversation likely to have taken place there, but those who read French well enough to enjoy the splendid literature with which the architects of the Bourbon dynasty have endowed the noble profession to which it is your privilege, and mine, to belong, will agree with me in admiring the rounded sentences of François Blondel, when he submitted himself to Louis the Great, and those of Desgodetz, when he approached Colbert. Be sure that these men, whom you no doubt regard as old classic fogies,—extinct like the dodo,—did antechamber in the grand fashion, of which we in England have little idea. In this country the spirit of the Renaissance was never imbibed as it was by the French of the sixteenth century, and this was probably due to the disturbed condition of home politics at the time, though the national character may have contributed to render obeissance less facile to Englishmen than it was in France. Indeed, Horace was often less fulsome in his prostrations to Cæsar and Mæcenas than were some of the French philosophers and poets of the great age to princes and nobles. To do antechamber then was the province of persons who aspired to live by literature or art, and it was only towards the close of the last century that emancipation from such unworthy thraldom was effected. It is pleasant to remember that, years before his death, Voltaire held the position of a patron rather than a client, and in England Prior was an ambassador, Addison a Secretary of State, while the most conspicuous figure in English politics, in the reign of our dead but ever gracious idol, Queen Anne,—I mean Lord Bolingbroke,—was friend and jolly good fellow with the three Yahoos of Twickenham,—Swift, Pope, and Gay.

It is pleasant, moreover, to read J. F. Blondel, and the architect, Patte, his editor, when they discourse on the antechamber, especially because both had a great deal to do with the development of home comforts in so far as they depend upon the arrangement of a dwelling-house. In their time the proper position of an antechamber was more important than the direction or turn of a corridor is in ours. J. F. Blondel, in his "Cours," complains of "our young architects," your *confrères*, gentlemen, who competed for the prize of Rome, and took the first place among architects in most of the European capitals and great cities,—those young architects who constantly forgot that a first antechamber was required in good houses to precede the antechamber, which was often used as a dining-room,—and thus got found out for being what it always was: a mere passage-way from one part of the building to another. The fact is that most *châteaux*, at the beginning of the Renaissance, were merely long narrow blocks of building divided crossways into rooms, one of which, selected here and there, was an antechamber. You had to pass, in going over such a building, from or through one room to another; and the antechamber, like the hall of ancient times, was an apartment common to every one, in which most of the servants spent the day and some the night. The doors of several rooms opened into it, and thus it was like the saloon of a ship,—which is used as a breakfast, dining, and tea, room,—surrounded by rows of private cabins.

Herein was the defect that Patte and Blondel stigmatised, visible in all the plans of the last century, and not completely remedied even at the beginning of this. If you want to judge of this defect in its most exaggerated form,—of the sort of confusion engendered by such planning,—you have only to stay a night or so at an inn, say, in the Pyrénées, or some part of the country distant from any of the great centres of French life. In such places you may, by chance, get a bed allotted to you in a spacious though irregular room, which you may find full of doors. Englishman-like, you will try and lock those doors; but it is a dangerous practice, for often every one of them leads into another apartment, and in your haste to be secure from intrusion you may lock up a priest or a bagman,—even a widow or a maid,—to your own regret, and, possibly, their indignation. The careful manner in which we now-a-days plan houses, both for town and country, so as to allow communication between every part of the building without necessarily passing through any of the various rooms is an advance upon the earlier practice; and, further, the very improvements which Voltaire commended, as having been made since the reign of Henry IV.,—which Patte signalised as having been perfected in his own time,—would be regarded now as fatal blots in an ordinary residence. The stride of this century in that, quite as much as in other more remarkable things, has been gigantic, and it would be affectation in any one who appreciates what he reads, and who does not lose his head in the contemplation of the picturesque, to doubt or deny our manifest progress in the arrangement of dwelling-houses. But in our successful efforts to improve, we have improved the antechamber from off the face of our world altogether. In place of it we get a narrow corridor, with here and there a lobby, and, content with such improvement which has economy in its favour, the uses and advantages of an antechamber have become obsolete,—at least, in England. Yet it served a great purpose in the old *châteaux* of Europe, and may still be seen in many that have not undergone alteration. To quote from a paper of my own, written a few years ago, an enormous antechamber often formed the sole entrance to a set of private apartments; it was a lofty room with a fireplace and large windows. The door to my lord's rooms was on one side, the door to those of my lady was on another. The bedrooms were used as living-rooms on ordinary occasions; only on extraordinary occasions were the great reception-rooms and the great dining-rooms used. In the descriptions extant of Versailles and Whitehall it is the antechamber in which courtiers met, and of which the most frequent mention is made; and I cannot refrain from urging those who are planning the now fashionable houses-in-flats to study some of these old French buildings, for there is a great deal in them which may be advantageously applied to the horizontal principle of house distribution, both as regards practical requirement and as regards artistic effect.

Take, for instance, a famous plan of a private house, designed and erected by J. F. Blondel, and published in his "Cours" for the purpose of showing students how to plan profitably upon a narrow and irregular site. Here is to be seen the antechamber as it was understood at the beginning of the last century, and the care with which he has managed to give an architectural shape to the room, in spite of more than one acute angle, is worthy of notice. Here, again, is a cheap block of flats built some years ago in Paris as a speculation, intended to pay its proprietor a good annual income. The block contains shops at the street level, and five residences on each story, reached by three staircases; they are arranged for very ordinary people belonging to the middle class, and who are content to live, so to speak, on the Surrey side of the river, at a considerable distance from the Place de la Concorde. Every attention has been given to make the private entrance to each flat useful and agreeable. An entrance like that shown on the plan bears the name of "antichambre," and I venture to think that such a well-considered arrangement as the plan before you, the work of M. Bonenfant, for a mere middle-class block of residences of comparatively low rentals, forms a pleasing contrast to the higgledy-piggledy jumble of shapeless rooms which is now known to Londoners, and joyfully accepted by them, as an orthodox flat. I need not stop to reflect upon the kind of bonfire many of these London blocks would make were it kindled in the basement; for that is rather an affair for statesmen and speculators to treat of, after a catastrophe; my purpose is to point to the uncomfortable and inartistic character of these new-fashioned residences, no portion of which is uglier or more carelessly treated than the hall or antechamber. I live in a flat myself, and appeal to our young architects, with some degree of personal feeling, against the kind of thing to which I have to submit. My door, opening inwards, is 3 ft. wide. Observe that the person opening the door from the inside must take refuge behind it, while the visitor entering from the outside strikes his nose against the wall in front of him. Flats with entrances like this, and containing, seven, nine, and even eleven rooms, are letting easily for 120*l.*, 140*l.*, and 160*l.* per annum, in neighbourhoods distant half an hour's walk from Piccadilly-circus.

Perhaps I may be allowed to refer to the fact of my having, in 1875, described to this Association "How the Parisians build a House-in-Flats." The paper was a fancy picture sketched at different times and from several examples. I made a further communication in 1878 to the Institute on "Middle-class Houses in Paris and London," and had I dared to say then that houses such as I portrayed,—not altogether similar to those erected twenty years ago in Victoria-street,—were almost immediately to cover whole streets in London and New York, the statement would have been regarded as the dream of an enthusiast. But the thing has happened, and I have a sequel to add which may be called a further dream. I want to see flat residences planned for central London, with three antechambers in each. If you will look

* Macaulay, writing of the "State of England in 1685," says:—"Hardly any gentleman had any difficulty in making his way to the royal presence. The levee was exactly what the word imports. Some men of quality came every morning to stand round their master, to chat with him while his wig was combed, and his cravat tied, and to accompany him in his early walk through the park."

in the *Builder*, of the 29th of June, 1878, you will see an article entitled "Shops and Houses for Central London," with an illustration at page 672. The article contains twenty-four rules for planning and erecting such buildings. In the eighteenth rule it is laid down that "Each residence be subdivided into three parts: one for day habitation, one for night habitation, and the third for the service." Mr. Godwin was good enough to approve of those rules which I had formulated, and contributed to his journal, and I would now go further, and add that "each subdivision have an antechamber proper to it." Thus, the antechamber to the day division would be the entrance-hall, and perhaps during the dinner-hour the serving-room; the antechamber to the bedroom division might contain a linen-press, a female servant might sit there at work, and it would be common to the womankind of the household; the ante-chamber to the service division might be the servants' hall, and form a salubrious break between kitchen, scullery, &c., and the other portions of the residence. Of course, I am not thinking of blocks of building like the French example I have shown, for so elaborate a scheme of distribution as that combining three ante-chambers; but I am convinced that if young architects who are working out the plans of flat residences will banish from their minds the modern idea of a passage, and try to realise the idea of two centuries ago,—namely, that of the ante-chamber,—they will attain to a principle of distribution more in harmony with the character of the problem to be solved than has yet been adopted by even experts in our art. By such a subdivision as that I have advocated, families may be properly accommodated in horizontal houses; but if the present mode of arranging these monuments of successful speculation be permitted to develop, the fashionable house-in-flats may become as fruitful a hotbed of disease, consequent upon overcrowding and want of air, as the worst slums of Marylebone or Soho.

Now, having treated the subject of the ante-chamber in a literal and in a colloquial sense, I will proceed, with your permission, to take an extended view of it, for we are now in the third and last phase of illumination as regards the text of this discourse.

Come back, then, for an instant to a state of primitive existence, and I feel sure that my friend Mr. Lawrence Harvey will afterwards assist me in unravelling the by-no-means tangled web of evolution. Horace sang of a simple enclosure containing a hearth or fire, around which lay the inmates, — men, women, children, and slaves,—while the smoke ascended through an issue in a roof of turf. That was the atrium, indeed the dwelling-house of Romans in the good old times, and it had a door but no windows. The client who waited upon his patron waited outside the door, and probably squatted there as natives of India do now in the verandah or the compound (*campagna*). But, as the community developed, the atrium increased in size and character; the open area or vestibulum outside the atrium door got a roof put to it, and horse, cart, and chariot were protected from the weather. The hole in the roof of the old atrium developed also, and, as the *cavum ædium* took architectural shape, a receptacle was provided for the falling rain, which no longer served to damp the open hearth, but fell only to replenish a piece of water cunningly contrived in the midst of an antechamber common to all the members of a household, to the stranger within its gates, and to the slaves, though rarely entered by the Roman matron and her spinsters, who occupied a reserved part of the improved dwelling-house. All this becomes easy to realise when you have once visited a Pompeian house; and, depend upon it, the great mass of Grecian and Roman houses of the Augustan period were not very different from those that still exist, thanks to Vesuvius, on the Neapolitan shore.

In similar progression the Mediæval hall ultimately took the shape discovered by archæologists. The hall of the twelfth century was a covered enclosure, strewn with rushes; dogs and horses, as well as men, women, and children, were sheltered within it. A fire was kindled in the centre for cooking purposes, rather than for warmth; and if there be no absolute evidence of a hole having existed in the roof of such a hall, you may be sure that the lantern of a later period was only a logical refinement of it. Further, as manners improved, a part of the hall was reserved for the master and his family. Hence the daïs or raised platform of wood, which afterwards got boarded in, and developed into the private chamber, the retreat of the lady of the household, the thalamos of Mediæval purity. Just as the vestibulum and peristylium developed in front and back of the primitive atrium, so chamber and antechamber grew naturally within the Mediæval aula or hall, and, to realise the process you have only to live on ship-board for a short time. When you have watched, say in the Red Sea, a sailcloth rigged up across a portion of a vessel's deck, to shelter a group of ladies or some sick passenger, you can at once comprehend the slow method of development that culminated before the sixteenth century in the *châteaux*, palaces, and houses with which our young architects of to-day are fatally familiar.

But to the people that read Dr. Perrault's translation of Vitruvius, to the great noblemen and great scholars who contributed to the magnificence of Louis XIV., the domestic works of the ancients were so many enchanted palaces, about which any extravagance would be believed possible, and to which any scale might be fearlessly applied. Perrault, with the mangled text of Vitruvius before him, designed a Roman dwelling-house of colossal dimensions, with area, vestibula, atria, cavædia, forming the, so to speak, public part of the house, with peristylia, and a host of rooms of every description forming the private portion. The Grecian house, devised in the same fashion, measures 350 ft. in depth by 275 ft. in frontage, that being, as you probably know, about 150 ft. longer and 175 ft. wider than the Parthenon measured at its topmost step. In the "Travels of the young Anarcharsis," written by the Abbé Barthelemi, more than a hundred years afterwards, the plan of a Grecian house shows a thalamos measuring 32 ft. by 25 ft., and an amphithalamos of similar shape and size, and the whole conception of the building is much more extensive than that of Perrault. Nearer our own time, Dézobry, who wrote a novel called "Rome in the Age of Augustus," and Mazois, who wrote another novel in which he described the Palace of Scaurus, imagined colossal edifices covering vast spaces sufficient to contain a Paris *place* or a London square. No wonder, then, that if scholars and experts lost their heads and continued losing them until nearly the middle of the present century, the princes and seigneurs of the Great Age took an exalted view of the images which the spirit of the time had set up, and accepted every estimate of Classical magnificence provided only that it was big enough. Hence the Château de Richelieu rose like a small town, and all over France the great landowners reared quadrangles of constructions, with outer and inner courtyards and annexes; erected chapels, sometimes theatres, and combined within their own walls all the refinements, and, indeed, all the civilisation, of their time. This went on in France all through the seventeenth century, but the fashion was not general in England until the eighteenth century. On the wall is a rough plan of Blenheim Palace, which was designed by Sir John Vanbrugh, and erected at the beginning of the eighteenth century; but the drawing shows only the principal buildings. Half a mile off on every side the country was mapped out to lead up to the palace. Avenues of trees, lakes and waterfalls, parterres, terraces one above another, perrons and flights of steps, astonished and confounded the spectator from any one of the hundred windows of the palace fronts. To misinterpret Pope, it was the architect's ambition of that day,—

> "Jones and Palladio to themselves restore,
> And be whate'er Vitruvius was before."

Of all the marvels produced either in France or England in the last century perhaps the most beautiful, as far as plan goes, was the Château de Marly, which was pulled down by order of the first French Republic. On the table is a monography of this great and almost last work of J. H. Mansard, in which you will find many beautiful points to observe, but also very much to avoid. The sole excuse for these extravagances lay in the assumption that the glories of Athens and Rome were being successfully emulated in the architectural monuments of the day. Pope, however, saw the absurd aspect of this kind of bombastic revival, and satirised it in his epistle to the Earl of Burlington, wherein Cannons, the estate of Lord Chandos, is alluded to as Timon's villa:—

> "Greatness with Timon dwells in such a draught
> As brings all Brobdingnag before your thought.
> Who but must laugh, the master when he sees,
> A puny insect, shivering at a breeze!
> * * * * *
> My lord advances with majestic mien,
> Smit with the mighty pleasure to be seen;
> But soft,—by regular approach,—not yet,—
> First through the length of yon hot terrace sweat;
> And when up ten steep slopes you've dragg'd your thighs,
> Just at his study-door he'll bless your eyes."

Before this was written Swift had caricatured with equal force the fashion of the day in literature. As terraces, vestibules, and ante-chambers had to be traversed before reaching my lord's presence, so books had their dedications, introductions, and prefaces. In "The Tale of a Tub," Swift begins with the author's apology, followed by a postscript; then comes a dedication to the Lord Somers, with a word from the bookseller to the reader; after which a dedication to Prince Posterity precedes the preface, while the matter of the book itself is almost lost in an introduction and conclusion of considerable length. The satire was deserved, and the commencement of the end of the grand epoch was thus announced. How the minds of men were affected by the "grand" and the "stately" in an age of courtesy and compliment, how they were guided in their appreciation of the works which served as its models, and ignored the Mediæval architecture of Western Europe, may be seen in Addison's description of the different effect produced by the contemplation of an ancient and a Mediæval building. "Let any one reflect," he wrote in the *Spectator* (No. 415), "on the disposition of mind he finds in himself at his first entrance into the Pantheon at Rome, and how his imagination is filled with something great and amazing, and at the same time consider how little, in proportion, he is affected with the inside of a Gothic cathedral, though it be five times larger than the other, which can arise from nothing else but the greatness of the manner in the one and the meanness in the other."

But we have changed all that, and more than one British student of architecture has asked himself, when outside the Pantheon, whether the precious time of a tourist in search of the picturesque might be profitably wasted by stepping inside. This same tourist, in his passage through French and Italian cities, may yet regard the great *portes cochères* of ordinary houses, the spacious courtyards of private residences, as so much space to be built upon, which his own more acute compatriots would long ago have converted into a solid mass of offices or dwellings. He may yet wonder why palaces of justice, Government and municipal offices, possess vast halls or *salles des pas perdus*, always open to the public, and often full of people, seeing that in his own more favoured country, the birthplace of popular liberty and common sense, the home of practical men, there are none of such things; and year after year it becomes more and more patent that such things can be dispensed with, and, indeed, are the mere vagaries of an exploded theory or the outcome of affectation, which is profitable solely to the architect, as the one person interested in making what we call a fine building. But neither in France nor Belgium, neither in Germany nor in Italy, do Governments think or act thus. There, no portions of a public work are more carefully considered, or more spacious, than the portions open to the people, and devoted to their use. How such works are understood in France, what the character of ideas which guide the architects who devise them is, may be seen in some of the selected designs for the Prize of Rome, photographs of which are hanging on the wall. There is actually a palace of justice among them, the architect of which has conceived not only the desirability of a magnificent vestibule, but also a public hall giving access, on each of its three sides, to a court of law. Nor are these designs the chimeras of irresponsible youth. Many of them, matured and, perhaps, reduced in dimensions, are afterwards worked into practical shape; they form parts of monumental buildings, paid for by the nation, and worthy of it,—the very antithesis of that British notion of compactness which may yet culminate in placing the hall-porter of our proposed new Government offices in a box on the street pavement, when it shall be seen, too late, that the spirit of false economy and speculative adventure which inspires the action of modern Ministers has added a fresh architectural calamity to the list of their irretrievable disasters.

Now, what have we got in the place of the

"grand" method of our fathers? In lieu of a courtyard we have a low doorway opening upon the public street; in lieu of a vestibule, of an ante-chamber, we get a vaulted corridor, which, in more than one instance I can name, has an entrance-door at one extremity and a darkened window at the other. Let us, then, inquire how this change has come about?—how men's minds have been led to accept the present haphazard fashion of planning new buildings, and the utter absence of any wish or attempt to compose them?

That the course of revival during the present century has been largely affected by literature of the romantic sort, it is unnecessary to do more than note. That it entered upon a new phase after the attacks of Pope, and the wits that he inspired, has been explained over and over again. The Gothic cathedral, the fortress converted into a signorial residence, the bishop's palace, the manse, the grange, or what not of Mediæval origin and descent, when they first attracted the archæologist, were made up of the work of different and successive epochs. A hall erected in one century had its window openings doubled in size in the next; fifty years afterwards a clearstory may have been added. The low porch, or the low arches of a cloister erected in the thirteenth century, may have been partly pulled down and rebuilt in the fourteenth century with more sharply-pointed arches, and filled in with tracery. What met men's eyes when they first began to see the beauty, and perhaps the grandeur, in Gothic work to which Addison was blind, was a something eminently picturesque,—a something that retained its beauty under grey skies, could do without sunshine, enjoyed a monopoly of gloom which served for shadow, and possessed, in its dilapidated, ivy-clad condition, all the charming properties of a sketch and few of the prosaic, necessary fittings or fixtures of the finished building. All over the country were to be found works of this kind; in many notable instances they were the heritage of noble families, of squires, and county people, whose reigning head might have pleaded, though he rarely did so, that the dilapidations of his ancestral home were typical of long descent and early connexion with the soil. Then inquiry bred inquiry, archæologists mustered, architects learned to reproduce such houses. Rich men who were not proud of their ancestors, and even had reasons for not alluding to them, jumped to find that money could purchase and architects could provide country seats as varied in age and as old in appearance as any ancestral home in the island. If the plan was irregular, if portions of the new erection had a tumble-down look, if the principal entrance was low and a little out of the centre, if it led to the back instead of the front part of the house, the illusion was all the more agreeable and complete. Architecture thus conferred gentility, and no complication of hall or passage was too irregular, no grouping of parts too illogical to subdue the owner's proud reflection that his new house was of the very oldest and most historical in style. So, after all, the immediate outcome of archæological science, whether it revive the ancient works of Athens and Rome or the Mediæval creations of Western Europe, is affectation, and not very dissimilar to-day from that of the great epoch of Louis XIV. and his successor. The Timon of Pope was pleased to create, often on a barren soil, something entirely new; the Timon of to-day aspires equally to create, but in fertile glades, something supremely old; and, as we are now considerate enough to deprecate with a smile the affectation of a Bathurst or a Boyle, so may posterity review kindly our present triumphs of architectural skill, which will, I fear, baffle, ere the next century be finished, all the wit of Birmingham, all the learning of Leeds.

Frankly, I feel that too much of the old grand manner,—not to be confounded with the "grand old" manner,—of the stately method of composition in architectural planning has been discarded, and that a too great regard for the picturesque at any price now tends to deprive a public building erected in this country of the oneness and harmonious disposition of parts which belong to the monumental erections of Paris, Vienna, and Berlin. I am not so Quixotic as to suppose that every building can be made to tell its proper tale, but I do most certainly think that our present method of grouping a congeries of buildings, with innumerable entrances, small and confined vestibules, all to do duty as parts of a public office, a town-hall, or a palace of justice, is fatal to popular convenience and destructive of private comfort. In all such buildings there should be not only an entrance, well and conspicuously marked, but a central hall in which the stranger or the visitor may obtain information to guide him in his search for a particular office or a particular court. The architect can only by such an arrangement afford the means of making his building intelligible and facile to those who use it. But whether by the fault of others who pretend to instruct him, or from his own desire to be quaint and picturesque, many of the newest public buildings in this country fail in just those points,—in the arrangement of those parts of a great building which should be common to the public,—upon which the architects of the two last centuries lavished their skill, displaying therein a by-no-means contemptible acquaintance with ancient learning, which they used to the profit of the arts and manners of their time.

For some notes of the discussion which ensued, see p. 873.

THE COURTENAY MANTELPIECE IN THE BISHOP'S PALACE, EXETER.

WHATEVER may be the case in other climes, the centre of attraction in an English living-room during nine months of the year is unquestionably the fire-place. It is right, therefore, that the object upon which the eye rests most frequently,—and, may we not say, most fondly?—should be one designed not merely to fulfil its special purpose, but to give artistic pleasure. This principle was kept in view by mediæval architects, and some grand examples of mantelpieces in marble, stone, and wood may occasionally be found in old English mansions and manor-houses. One of more than ordinary beauty is to be seen in the episcopal palace at Exeter, where it occupies the position in the hall assigned to it by Bishop Phillpotts in 1845. Previously it had stood in the dining-room, and, when there, borrowed tone and colour from the light which fell upon it through the richly-blazoned windows. This consideration may, perhaps, account for the absence of any traces of gilding or colouring even upon the armorial bearings and heraldic devices which are the chief features of the mantelpiece.

The mantelpiece forms the subject of a dainty volume, printed, unfortunately, for private circulation only, at Torquay,* and rendered attractive by the skilful pencil of Mr. Roscoe Gibbs, and the no less skilful pen of Mrs. Maria Halliday. The history of the mantelpiece is told by itself in the language of heraldry. The centre finial, which rises to a height of 12 ft., consists of the arms of France and England within the garter, surmounted by the arched diadem of Henry VII., and supported by the greyhounds of his consort, Elizabeth of York. Beneath the royal escutcheon occurs the portcullis,—the cognizance of the Beauforts, which is repeated in the decorated soffit below, and serves for a capital to the dexter column flanking the mantelpiece, as the double rose does to the sinister one. In this arrangement there is an obvious allusion made to the union of the houses of York and Lancaster in the person of Henry VII. Below the royal arms is a beautifully-carved mitre, to which are attached two pendants richly fringed. The position of the mitre may, perhaps, indicate that in Tudor times the supremacy of the Crown was recognised even by

> "Sir Edward Courtney and the haughty prelate,
> Bishop of Exeter, his elder brother,"
> ("Richard III.," act iv., sc. 4.)

to whom Henry of Richmond was largely indebted for his throne. But the great glory of the mantelpiece is the entablature, which is divided into three equal compartments, each occupied by heraldic shields and other devices. Scrolls bearing appropriate mottoes are introduced with great skill, and the disposition of the dolphins round the centre escutcheon (the arms of the see of Exeter impaling those of Courtenay) is singularly felicitous. In the mouldings, horizontal and perpendicular, the bishop's initials and family badges give distinctive character to the work, even in its smallest details. It should be mentioned that all the carving is executed in low relief, and in its present position is seen to much less advantage than in that for which it was originally designed. On the other hand, it is in exceptionally perfect preservation, and is one of the best specimens we have of genuine heraldry applied with taste and meaning to internal decoration.

Mr. Gibbs has added much to the value of his monograph by his researches into the heraldic bearings of the sees of Exeter and Winchester; and his delineation of their differences, as seen in the monuments and stained glass yet extant in Exeter Cathedral, is exceedingly curious. He also draws attention to the remarkable figure carved on the east end of Bishop Stapledon's monument at Exeter, which, from its position, escapes general observation. It is evidently that of King Edward II., whose cruel murder at Berkeley Castle preceded that of the bishop by a few weeks only. The expression of the face is rendered with great power, and five centuries have not sufficed to destroy the original colouring of the figure.

* At the office of the "Torquay Directory," 1884.

HATCHETT'S HOTEL AND "WHITE HORSE CELLARS," PICCADILLY.

WE have had an opportunity of going over these premises, now just completed and on the eve of opening. They occupy the site of the old buildings bearing the same designations,—so well known in the past and at the present day in connexion with coaching business and four-in-hand clubs,—and the result is a notable addition to the architecture of Piccadilly. The style adopted by the architects, Messrs. W. S. Weatherley and F. E. Jones, of 20, Cockspur-street, is English Renaissance of about the period of John Thorpe's Kirby Hall, the first stone of which was laid in 1570. The materials used externally are red bricks (supplied by Mr. Thomas Lawrence, of Bracknell) and Ancaster stone. The building is lofty and picturesque, and by means of bays and oriels a great variety of prospect has been obtained, the situation at the corner of Dover-street being very advantageous in this respect. The "White Horse Cellars" are perpetuated in the form of a new and lofty chamber in the basement, vaulted in Dennett's fireproof construction, and having a high dado of panelled deal. Although the floor of this apartment (which is paved with Lowe's wood-block flooring) is 17 ft. 6 in. below the pavement level, there will generally be abundance of light, daylight being supplemented when necessary by incandescent electric lights, of which Messrs. B. Verity & Sons, of King-street, Covent-garden, have provided an installation, worked by one of Otto's 12-h.p. gas-engines setting in motion one of Edison's T dynamos. The engine and dynamo are provided in duplicate, in order to provide against breakdowns, repairs, or other contingencies. So far the electric light is only provided in the basement and on the ground-floors, and to the principal staircase. The distribution and mode of treatment of the fittings for the incandescent lights have been specially arranged by the architects, and exhibit a welcome departure from the tentative expedient of utilising the forms of gasfittings. In the "Cellars," the incandescent lights are inclosed in small lanterns suspended from coronæ; in some of the apartments on the ground-floor the lanterns inclosing the lights are suspended near the ceiling by silk cords; and in one case they are very happily combined with the pendants which form part of the design of the ceiling. The effect in each case is very satisfactory, and the fittings are well carried out by Messrs. B. Verity & Sons. The large and lofty vaulted chamber already referred to as forming part of the basement is to be used as a luncheon-room, it being approached by a broad marble-lined staircase from Piccadilly. In this apartment there will be a grill for chops and steaks. The ground-floor will be appropriated to a buffet and luncheon rooms, and on this floor also there will be the Coaching Coffee-room. The public and private dining-rooms are on the first floor. The woodwork of some of these rooms is of ammoniated wainscot, that of the large dining-room and of other rooms being of American walnut. The external doors are of teak. The fireproof construction is by Messrs. Dennett & Ingle. All the ornamental ceilings have been made from the architects' designs, by Messrs. George Jackson & Sons, in their fibrous plaster. The furniture and decoration is by Messrs. Shoolbred & Co. "Tynecastle Tapestry," very richly decorated, is used in some of the principal rooms and on the staircase, as a wall covering, while in the bedrooms

flowered silk damask is employed for the same purpose. The ceilings of all the principal apartments are richly decorated, gold being plentifully though not too lavishly employed, the effect being rich without any approach to garishness. The fittings, including the chimney-pieces, have been specially designed by the architects. The kitchen is at the top of the building, but completely cut off from the main staircase. The kitchen fittings are by Messrs. J. & F. May, of Holborn, and are very complete. The vestibule of the hotel proper (to which the entrance is in Dover-street), is provided with a telephone lobby, and with another lobby containing electric-bell indicators and communicators. The wrought iron balustrade, richly gilt, to principal staircase, is by Mr. J. Stone. The locks and the fanlight apparatus (patented for this building) are by Charles Smith & Co., of Birmingham, who also executed the external wrought-iron railing and gates. The stoves in bed and sitting rooms are by Longden, of Sheffield, the dog-grates in the larger rooms being supplied by Messrs. Shoolbred. The whole of the marble-work, including chimney-pieces, has been executed by Messrs. Farmer & Brindley, and is noteworthy for excellence of workmanship as well as for beauty of material. The hall and staircase have white marble steps and strings, the walls up to handrail level being a "brescia," and above that height "Pavonazzo." The columns and pilasters in the large dining-room are of "Brescia Africano," the chimney-pieces in the same apartment being of "Giallezza statuary," the coupled columns of the same being beautiful specimens of "Isola." The counter-top in the buffet is of "Giallo Antico," from the ancient quarries near Carthage. Other marbles used are "Orange Verona," "Yellow Verona," "Polcevera," "Pavonazzo," and a choice Spanish marble from Catalonia. The bed and sitting rooms, while combining a general unity of style with great cosiness, are pleasingly varied as to size and shape, decoration and furniture, and the service arrangements are excellent. The sanitary arrangements are mainly by Messrs. Jennings. The lavatories are by Messrs. Bolding. The fire hydrants, &c., are by Messrs. Merryweather. The electric bells were supplied by Mr. Dale; and the lightning-conductor is by Messrs. Gray & Co. The contractor for the erection of the building was Mr. John Grover, of New North-road.

A New Floating Fire Engine.—On the 19th instant a trial took place with a new self-propelling floating steam fire-engine, constructed by Shand, Mason, & Co., to the order of the Bristol Corporation, for the protection of the docks and water-side property in that city. The hull and propelling engines have been constructed to the specification and under the superintendence of Mr. J. W. Girdlestone, engineer to the Bristol and Avonmouth Docks, while the fire-engine is similar to one supplied in the early part of this year to the Metropolitan Fire Brigade, which, we are informed, has proved so successful at several water-side fires that two others are now in course of construction by the same makers. The experiments were conducted in the presence of Captain Shaw, C.B., Chief of the Metropolitan Fire Brigade, and Mr. Wingfield, superintendent of the Bristol Fire Brigade, and were carried out in a satisfactory manner. At a previous trial a few days since at the measured mile a mean speed of 8·9 knots per hour was obtained, which, considering the size and special construction of the boat, proved very satisfactory. The boat is of steel, 53 ft. long and 13 ft. 6 in. beam, built in four water-tight compartments, the screw propeller being driven by a pair of high-pressure engines supplied with steam from the fire-engine boiler. The fire-engine is Shand, Mason, & Co.'s equilibrium, discharging 1,100 gallons per minute through a 2 in. jet, reaching, under favourable circumstances, a height of 200 ft. There was no opportunity of testing the height on this occasion, but a water-pressure of 140 lb. per square inch was obtained, the steam-pressure being 110 lb. The boiler is of Shand, Mason, & Co.'s patent inclined water-tube construction, which has been successfully in use for fire-engine and other purposes for fifteen years. The boat will be taken through the canal to Bristol in a few days and finally tested there in the presence of Mr. Girdlestone and the Bristol authorities.

Illustrations.

DESIGN FOR WAR AND ADMIRALTY OFFICES.

BY MR. E. R. ROBSON.

We gave Mr. Robson's design for the War and Admiralty Offices in the form in which it was submitted for the first competition (see *Builder* for August 16 last), but we think that the fine qualities of the design render it well worth being shown to more advantage than in the small scale-line elevations of the first competition series. Mr. Robson has had two points in the design, at our suggestion, worked out in detail in perspective views; viz., part of the Whitehall Front and an angle of the Park Front. The method in which the old Admiralty screen is worked on the Whitehall Front, with the main building carried round in a semi-circular sweep behind it, is very effective. The Park Front shows some happy adaptation of Classic detail with considerable originality and refinement.

Few of the designs exhibited seem to us to have so well combined the idea of a War Office, in the stern solidity of style and simplicity of grouping which characterise the building, with the merit at once of originality and coherence in architectural treatment.

DESIGN FOR INFECTIOUS DISEASES HOSPITAL, NEWCASTLE-ON-TYNE.

The design which we illustrate was prepared in conformity with the instructions issued. The administrative block is in a central position, and near the road. The medical officers' rooms are *en suite* on the ground-floor. The matron's sitting-room and store-rooms, nurses' dining-room, kitchen, and offices, are on this floor. The dispensary adjoins the nurses' room. On the first floor are bedrooms for the matron and nurses, and on the second floor bedrooms for the servants.

All the ward blocks are placed almost due north and south. Each block accommodates fourteen patients: ten in general ward, two in small ward, and one each in two single bed wards. For each patient in the general ward there are allowed 11 lineal feet of wall space, 143 superficial feet of floor space, and over 2,000 cubic feet of air space. Excessive window area has been avoided. At the south end is a "sun-room," with open fireplace for convalescents. The windows are so arranged that they can be folded back, and an open verandah formed for use when the weather permits. An alternative arrangement shows terrace, as the "sun-room" was not mentioned in the instructions. Disconnected from the ward block by the main corridor are dressing and bath rooms, with entrance-lobby, where patients are treated and clothes changed preparatory to entering or being discharged. The connecting corridor is 10 ft. wide. The upper parts of the windows are filled with glass louvres, the lower parts hung so as to fold against the wall, and form into an open corridor.

Ventilation.—Inlets for fresh air behind each fireplace, under each bed, and in corners, warmed when required. Top part of windows swing inwardly; lower part, double-hung sashes, with bottom bead the depth of the rail, so as to admit air at meeting-rail without draught. Above the ceiling is formed a ventilating chamber, in which are hot-water coils, with louvres at the ends, and two large air-pump ventilators on the ridge. In the ceiling of the general ward, to each pair of beds, is an opening for outlet, fitted with exhaust and draught-preventer box, in which a gas jet, on the Bunsen burner principle, would be continuously burning. Each chimney has an exhaust ventilating-flue, and each gaslight has its separate vent.

ST. OSWALD'S COLLEGE, ELLESMERE.

This Lower Middle-class School is to be for 500 boys, to be boarded and educated at 18*l.* 18s. a year as at Ardingly, and is for the sons of the lower middle classes and upper artisan class. This amount is proved at Ardingly to give a profit, and, therefore, there is power at Ellesmere to reduce the annual fees when practicable. At present there is accommodation for 200 boys, and the numbers will be gradually increased as the buildings are completed.

The general form of the plan is that of the letter H, giving two open quadrangles facing west and east, with extensions to the south and north. At present there are erected the cross building of three stories, the ante-hall and hall, a two-storied building running west, and the offices on the north. Both hall and offices are for the complete number of boys. The dormitories face west on both the upper floors of the cross building, with a cloister 8 ft. wide on their east side, arched with brickwork. There are masters' rooms on these floors, and on the ground-floor, together with Provosts and other rooms, and staircases at each end, one of which is private, for the servants only. The principal entrance is in the centre of this block, and forms the connexion between the two quadrangles. The western quadrangle opens on a magnificent view over the Welsh mountains, from the Llangollen Valley to the Breidden hills, near Welshpool.

The eastern quadrangle is reached by a new road from the Ellesmere-road. Ellesmere is about a mile away. The new road winds round a curious artificial hill called "Spy-bank," supposed to have been a look-out place in British times.

The hall occupies the north side of the western quadrangle, and is 120 ft. long and 36 ft. wide. The lower story has flat-headed mullioned windows; it is now used as the chapel, but will be converted into a gymnasium when the permanent chapel is erected. The hall is reached by a flight of steps from the ante-hall. The ceiling is of flat timber construction and carried on two central stone columns; the angles of the plan are filled with oriel mullioned windows.

The cloisters of the wing enter on the south, and the archway is formed on the east for the chapel. On the north the offices open out. The offices have large kitchen, bakery, and laundry arrangements, and large dormitories and bedrooms for servants and servitors, and also bath-rooms, &c., for the boys' use.

Foundations are put in for the dormitories and master's rooms and great school-room on the south side of the eastern quadrangle.

The corner-stone was laid by the Earl and Countess Brownlow, on August 5th, 1879, and since then the buildings have been steadily carried out. Mr. Bowdler, of Shrewsbury, executed the foundations, and Mr. Collins, of Tewkesbury, the superstructure. The finishings and fittings have been done by tradesmen employed by the committee, under Mr. Garland, the clerk of works. The heating is by Messrs. Haden, and the laundry fittings by Messrs. Bradford. About 27,000*l.* has been at present expended.

The architects are Mr. R. Herbert Carpenter & Mr. B. Ingelow, of London, the college architects. The style of the buildings is a simple variety of Late Gothic, the hall windows alone having tracery, others having square Cefn stone heads and mullions. The facing and walls are of red Ruabon brick, as are the strings, plinths, window and arch jambs, &c. The roofs are covered with Portmadoc slates; paving bricks from Ruabon are used extensively for the cloisters and offices, stair landings, &c. The ultimate cost will be about 50,000*l.*

BEDSTONE COURT, SHROPSHIRE.

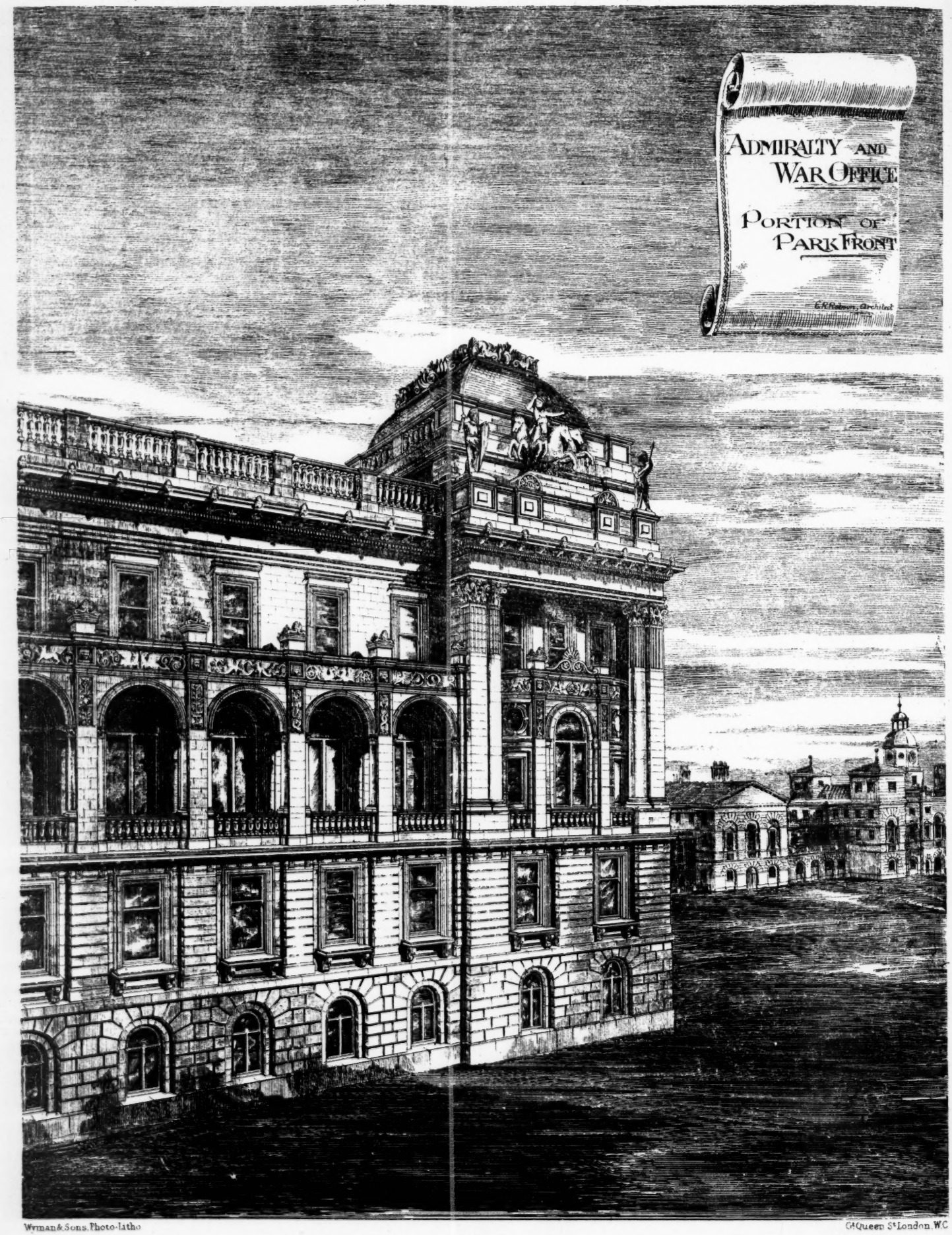
We gave the description of this house in our last. We add this week the plan and another view of the house.

Trade Calendars.—A calendar for 1885, which will be very useful to plumbers, painters, and glaziers, has been issued by Messrs. Farmiloe & Sons, of 34, St. John-street, West Smithfield. It contains tables giving weights of lead pipe; weights, gauges, and sizes of sheet zinc; glass measurement table, giving superficies from 24 in. by 40 in. to 60 in. by 40 in.; a calculator for the oil-trade, for reducing the cost per ton to the cost per gallon; and much other handy information for the trades mentioned. It is mounted on stiff cardboard so as to hang on the wall of office or workshop, and may be had for sixpence.——Another handy trade calendar for the wall has been issued by Mr. A. J. Hall, of Barrington-road, Brixton. This includes a table showing the number of feet of different scantlings (from 2 in. by 4 in. to 4 in. by 12 in.) in a Petersburg standard; a table showing price per standard at so much per foot run; and other useful information.

BEDSTONE COURT SALOP.
the residence of the late SIR HENRY W RIPLEY. BART.
Mr Thomas Harris FRIBA. Archt

C F Kell Photo-Lith & Printer

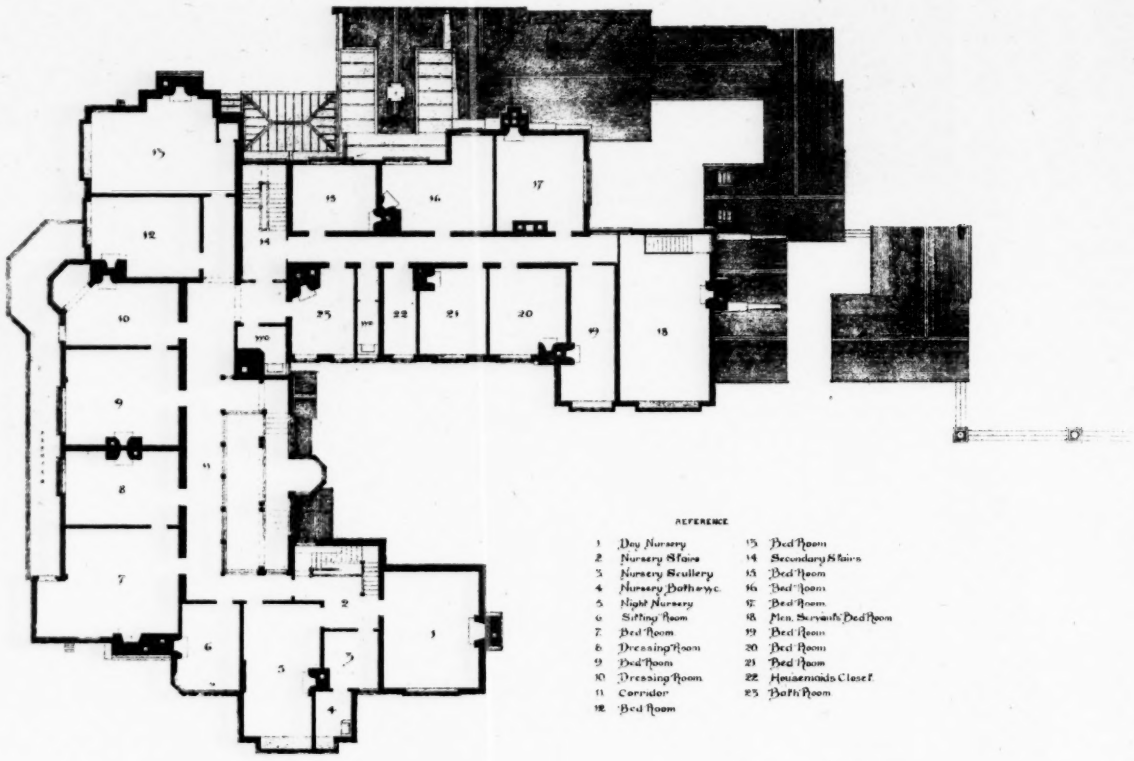
6, Castle St. Holborn, London E.C.



Wyman & Sons, Photo-litho. 64 Queen St London, W.C.

PERSPECTIVE VIEW OF PORTION OF DESIGN FOR ADMIRALTY AND WAR OFFICES.

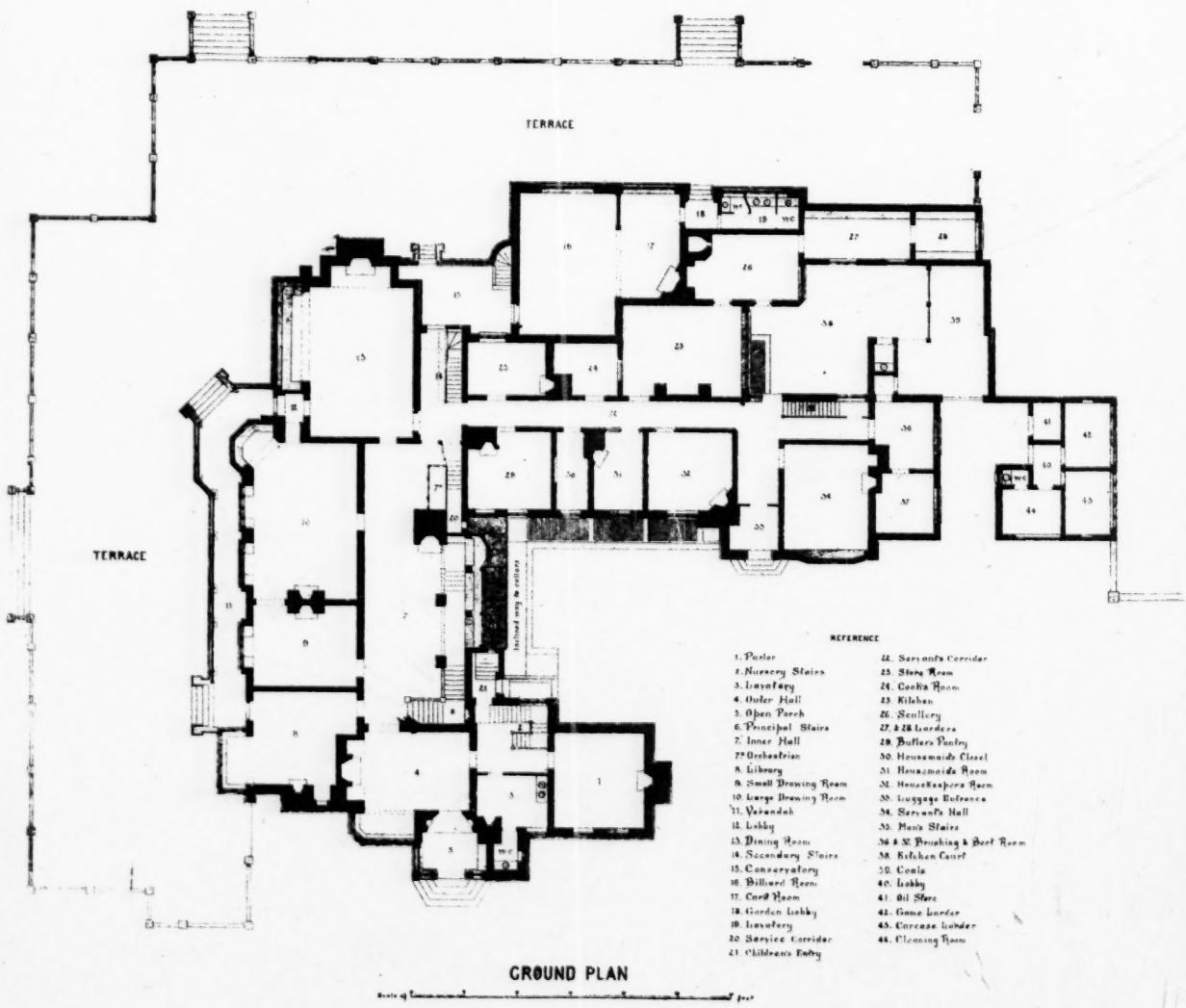
By Mr. E. R. Robson.



REFERENCE

1. Day Nursery
2. Nursery Stairs
3. Nursery Scullery
4. Nursery Pantry & W.C.
5. Night Nursery
6. Sitting Room
7. Bed Room
8. Dressing Room
9. Bed Room
10. Dressing Room
11. Corridor
12. Bed Room
13. Bed Room
14. Secondary Stairs
15. Bed Room
16. Bed Room
17. Bed Room
18. Men Servants Bed Room
19. Bed Room
20. Bed Room
21. Bed Room
22. Housemaids Closet
23. Bath Room

FIRST FLOOR PLAN



REFERENCE

1. Parlor
2. Nursery Stairs
3. Lavatory
4. Outer Hall
5. Open Porch
6. Principal Stairs
7. Inner Hall
7a Orchestrion
8. Library
9. Small Drawing Room
10. Large Drawing Room
11. Verandah
12. Lobby
13. Dining Room
14. Secondary Stairs
15. Conservatory
16. Billiard Room
17. Card Room
18. Garden Lobby
19. Lavatory
20. Service Corridor
21. Children's Entry
22. Servant's Corridor
23. Store Room
24. Cook's Room
25. Kitchen
26. Scullery
27. & 28. Larders
29. Butlers Pantry
30. Housemaids Closet
31. Housemaids Room
32. Housekeepers Room
33. Luggage Entrance
34. Servant's Hall
35. Men's Stairs
36 & 37. Brushing & Boot Room
38. Kitchen Court
39. Coals
40. Lobby
41. Oil Store
42. Game Larder
43. Carcase Larder
44. Cleaning Room

GROUND PLAN

Scale of feet

BEDSTONE COURT, SALOP,

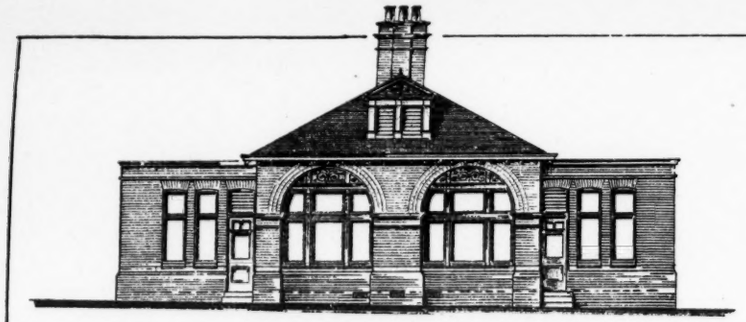
THE RESIDENCE OF THE LATE SIR HENRY W. RIPLEY, BART.

MR. THOS. HARRIS, F.R.I.B.A., ARCHITECT.

C. F. Kell Photo-Lith & Printer

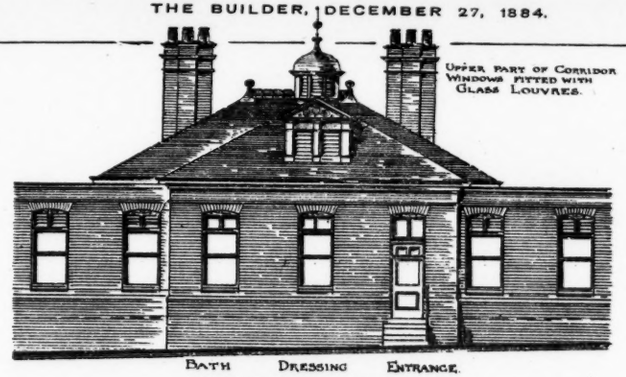
S. OSWALD'S COLLEGE, ELLESMERE. MESSRS. R. H CARPENTER & B. INGELOW, ARCHITECTS.

8 Castle St Holborn London E.C

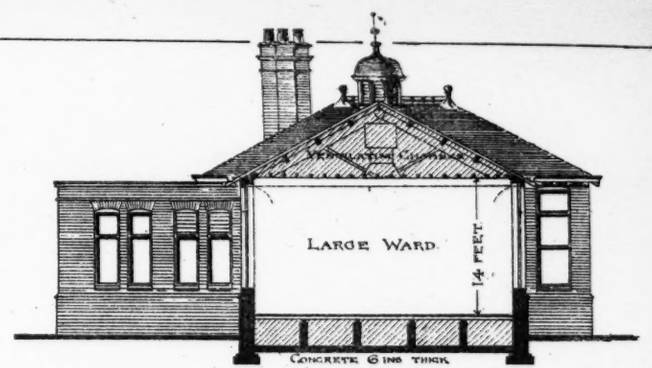


SOUTH END SHEWING SUN ROOM

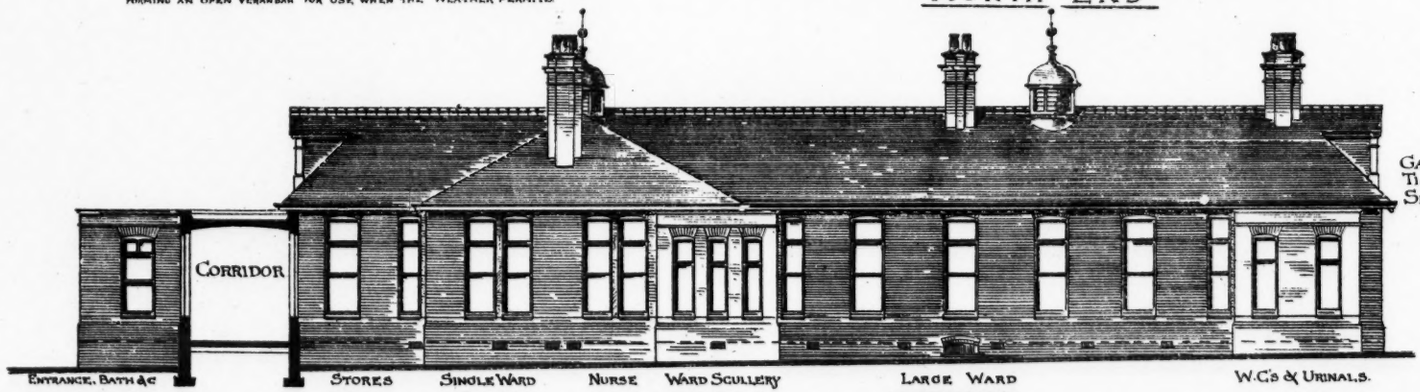
NOTE. THE WHOLE OF WINDOWS AT END OF SUN ROOM CAN BE FOLDED BACK LEAVING THE OPENINGS QUITE CLEAR, THUS FORMING AN OPEN VERANDAH FOR USE WHEN THE WEATHER PERMITS.



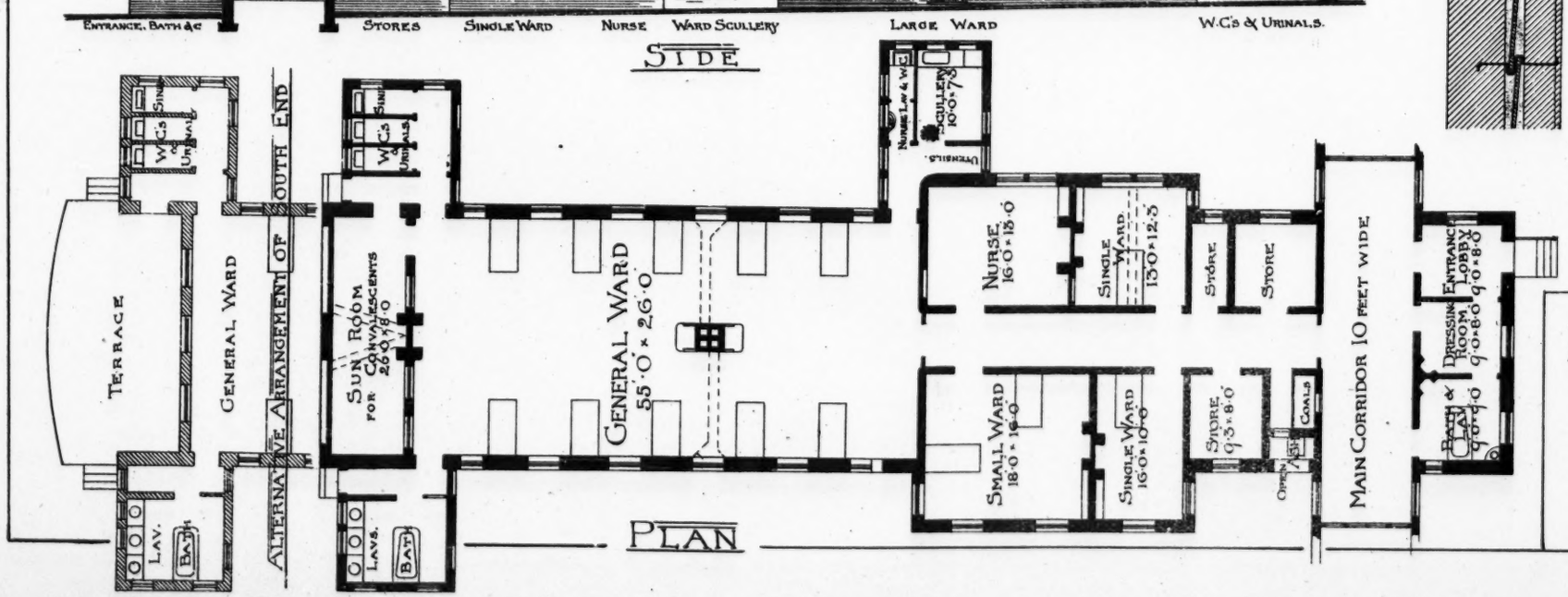
NORTH END



SECTION

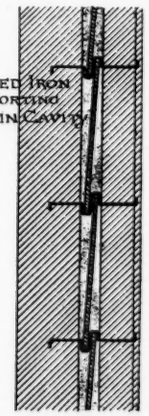


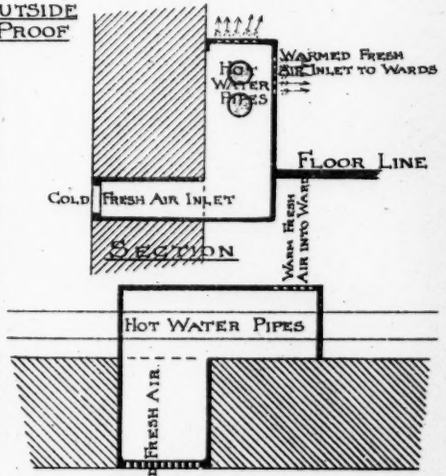
SIDE



PLAN

SECTION OF OUTSIDE WALL · DAMP PROOF





SECTION

PLAN

DETAIL SHEWING HOW FRESH AIR IS WARMED BEFORE COMING INTO WARD UNDER EACH BED

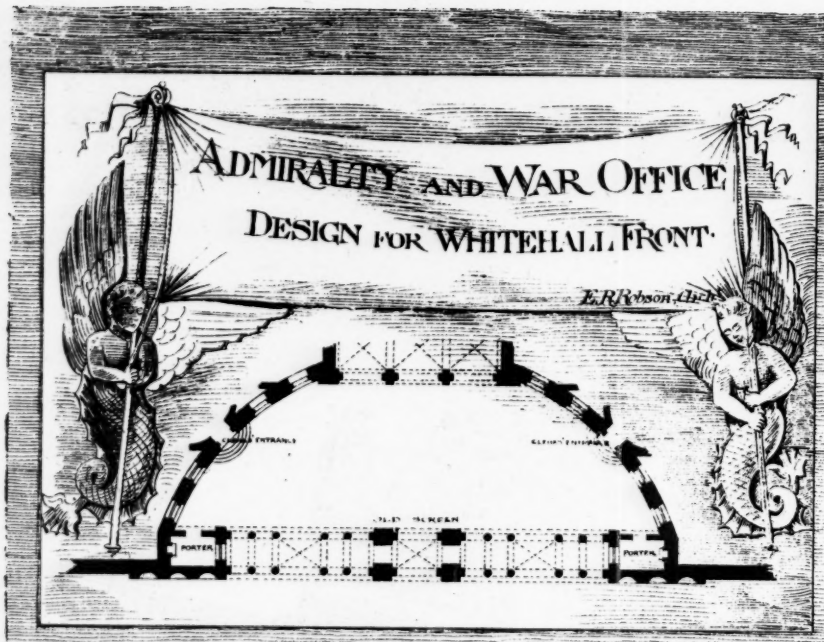
SEE DESCRIPTION AS TO VENTILATION

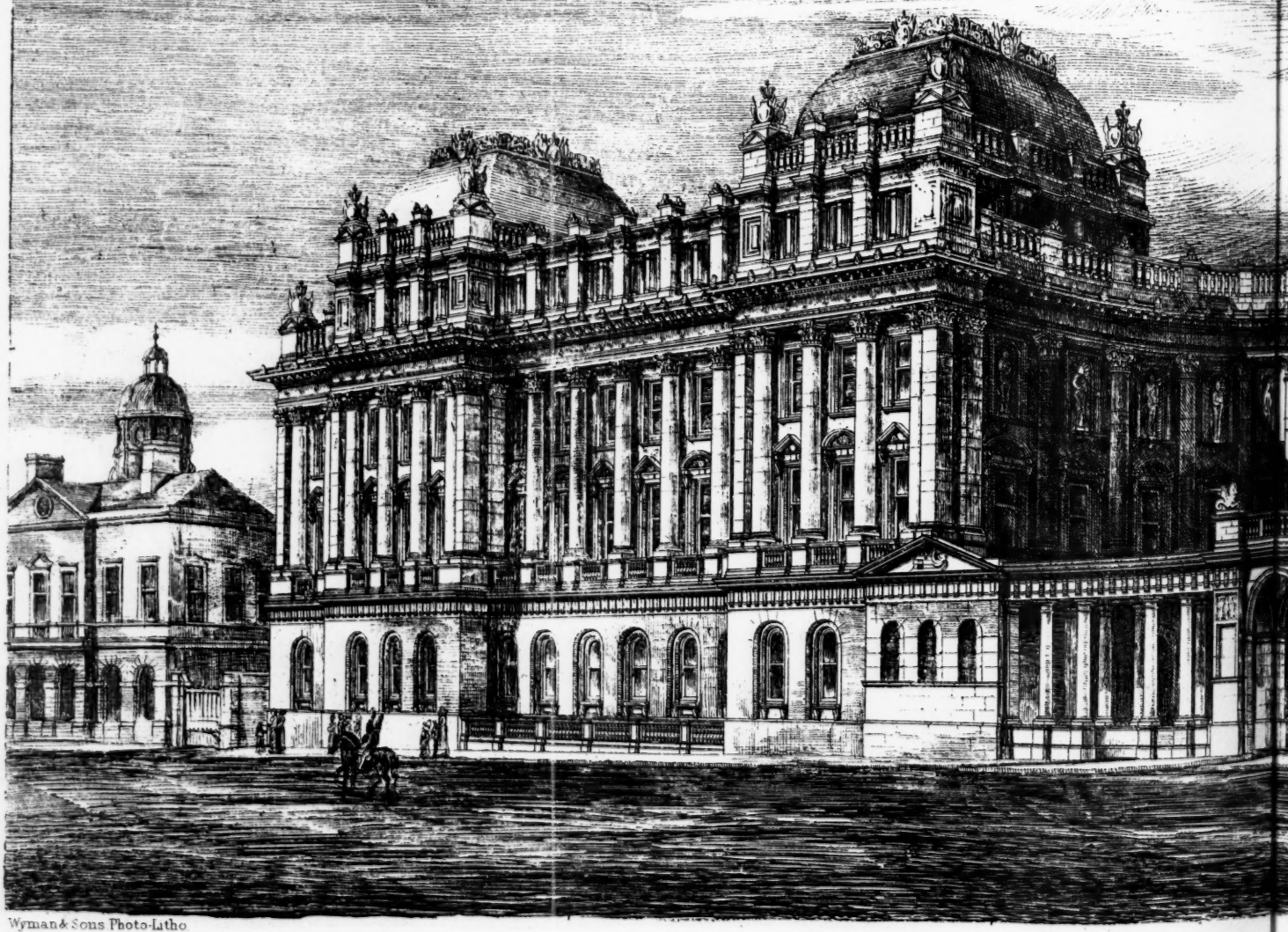
Newcastle Infectious Hospital.

THIRD PREMIATED DESIGN.

MR. J. BRADSHAW GASS, ARCHITECT.

Wyman & Sons, Photo-Litho.

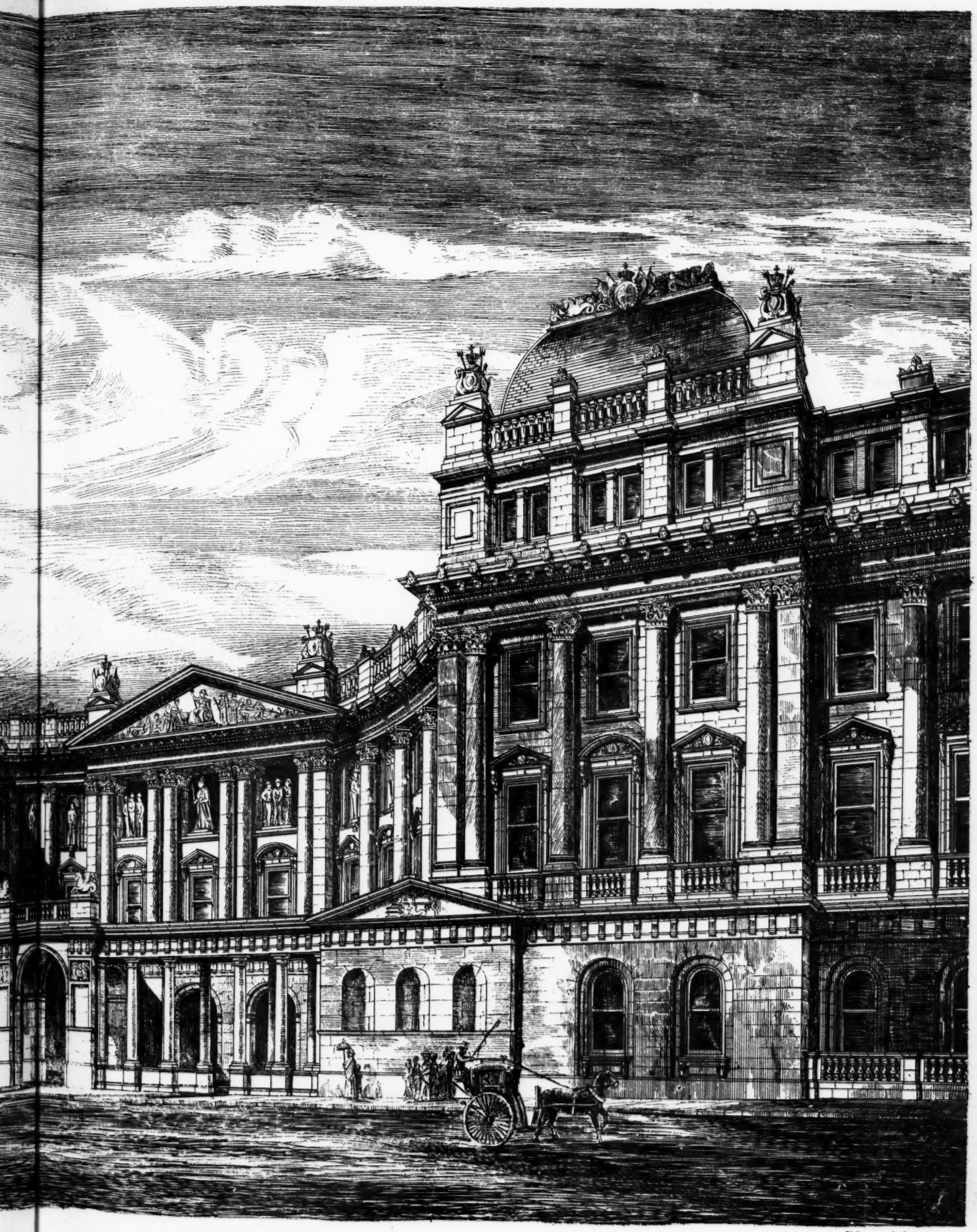




Wyman & Sons Photo-Litho

PERSPECTIVE VIEW OF PORTION OF DESIGN FOR ADMI

Showing Whitehall Front and Old Ad



C. Queen St. London, W.C.

ADMIRALTY AND WAR OFFICES BY MR. E. R. ROBSON,

Old Admiralty Screen in new Position.

ARCHITECTURAL ASSOCIATION.

THE fifth ordinary meeting was held on Friday, the 19th inst., Mr. Cole A. Adams, President, in the chair.

The Chairman drew attention to the report of Mr. George Aitchison, A.R.A., on the work submitted in competition for the Prize in the Class of Colour Decoration, 1884. In this report Mr. Aitchison gave Mr. Hennings the first place, Mr. Lewis being put second.

Mr. W. H. White then read a paper entitled, "The Ante-chamber, To-day and Yesterday, in French and English Plans," which we print in another part of this number.

The Chairman, in opening the discussion, remarked that looking at the question simply as treating of the ante-room, it would appear, at first sight, that little could be said. Those, however, who had followed Mr. White's paper might deduce from it that the tendency of the Gothic revival had been, perhaps, too much in the direction of studying picturesque effect, and neglecting that balance of parts which distinguished the Classic era of architecture. In modern houses the hall had become an important feature, and in many cases in his own experience great stress had been laid upon its being a sort of ante-room, with staircase leading out from it, and the other rooms grouping around it. No doubt the ante-room had disappeared in many houses simply from questions of cost. In the Albert Hall Mansions, planned by Mr. Norman Shaw, the visitor, after ascending the great staircase and knocking at the door, is at once shown into a square chamber, from which the rooms lead out; and a very pleasant arrangement it is.

Mr. Lawrence Harvey said that Duban termed architecture, *décoration construite*, and the architect of Blenheim had apparently the idea of immense decorations acting as a frame for the proprietor. The idea of decoration should not be allowed to run counter to that of practicability; but Vanbrugh's idea was that a quarry of stones should be used to produce effect. Although not a Gothic architect himself, he considered that the Gothic people took a much more correct view of architecture than the Classics did in works of this kind.

Mr. J. A. Gotch proposed a vote of thanks to Mr. White, and expressed his admiration for the ingenuity displayed in making the subject of the ante-chamber so amusing and instructive. As a matter of fact, huge wandering plans were in existence before the last century, one notable instance being Audley End in Cambridgeshire. This house, although now too large for the occupier, only covers one-fourth of the space it originally did. The house consisted of a block and two large courtyards, one being simply a series of little rooms or lodgings, which in the course of time were found to be useless, and were taken away. So that about the time when Blenheim was being erected, with its superfluous and unmeaning grandeur, Audley End was being denuded of what had been weighed in the balance and found wanting. Lord Bacon, in his description of what a palace should be, mentioned the "*Ante-camera*" as a necessity for a noble suite of rooms. The idea of making the hall into a sort of sitting-room seemed to be a very admirable one where it could be done, because at present a great deal of space in the shape of passages and corridors was thrown away.

Mr. G. H. Blagrove remarked that it was only in the case of large mansions that they had the opportunity of planning the hall. Mr. White might have said whether he preferred having a staircase separate from the hall, or having it worked in and made an important feature of the one hall. Sometimes a very fine effect was produced in old mansions, such as that at Gatton, near Reigate, by the hall being carried up two or three stories. Some excuse might be pleaded for the defects pointed out in Blenheim, as it was distinctly a monumental building. It was allowed to be a great work of genius.

Mr. W. H. Nash said that Vanbrugh had the virtue of using good materials, whereas in Italy Palladio's palaces were frequently built of stucco and plaster. The ante-chamber might be very well utilised in modern plans. The wretched passages called halls were a disgrace to any country.

Mr. F. R. Farrow (holder of the Godwin Bursary), referred to the houses in Vienna, which were built in flats with plenty of ante-chambers. One great drawback, from a London point of view, to the plan of the Continental house, was the great expense of having ante-rooms. It would have the effect of raising the rents of the flats, which were already too high. In Vienna a man had to pay away one-third of his income in the rent of his suite of rooms, and this was accounted for by the fact of their being planned on a grand style and having so many rooms which were not strictly necessary.

The vote of thanks having been cordially received,

Mr. White, in replying, said that Mr. Gotch was correct in saying that grand planning came over from France in the latter part of the seventeenth century. As to the excessive cost which would arise in the case of houses with three ante-chambers, the present speculative owners of houses were making 7 or 8 per cent., but, if they would be content with less, the occupiers might have their ante-chambers, and he believed this would be the case ere long.

COMPRESSED AIR

AS A TRANSMITTER OF POWER AND AS A SANITARY AID.

A PUBLIC meeting of manufacturers and others was held in the Old Lecture Theatre of the Midland Institute, Birmingham, on the 17th inst., to receive explanations of the scheme of the Birmingham Compressed-Air Power Company, who propose to supply to power-users from a common centre compressed air for the driving of machinery, &c., upon terms and conditions which, it is claimed, will compare advantageously with the cost and practical requirements of steam. Having obtained Parliamentary powers and the consent of the Corporation, the company propose to erect works and lay down mains for the supply, in the first instance, of the central wards of St. Bartholomew, Deritend, and St. Martin, whence it can be extended, as the demand arises, to other parts of the town, where manufacturers or customers are found in sufficient numbers to make the undertaking remunerative. Under this system air-power will be laid on in the same way as gas or water, and may be turned on or off at will at any period of the day; and as users will only pay for what they consume, which will be measured by meter, there will be none of the waste inseparable from the use of steam.

Some interesting and important considerations in favour of the project (assuming the possibility of its practical success) were laid before the meeting.

The Chairman (Mr. Arthur Chamberlain) pointed out that the carrying out of the scheme would save a large outlay on capital account to each manufacturer, inasmuch as steam boilers and chimney-shafts would not be needed. Moreover, users of compressed air as a motor would be able to "average" their consumption of power. At all times some manufacturers were busy and some were not, but whether busy or slack, if they used steam power they had to keep at the works the same plant for the production of the full amount of power that they might at any time require. By the adoption of compressed air as a motor they could use much or little, as their requirements varied. Moreover, no change of plant was involved, for engines which were now driven by steam could be driven by compressed air, and the abolition of steam boilers in workshops would take from employers a great deal of anxiety.

Professor Henry Robinson, of King's College, said that a meter had been devised which would not only register the volume of air which passed through, but its pressure, the Company being required by their Act to supply air at a certain pressure. There need be no appreciable loss of power through leakage and friction.

Mr. Wilfrid Airy made some interesting observations with regard to possible off-shoots of the main scheme, firstly, the driving of clocks and keeping them going in true time by means of compressed air. There were in Paris something like 8,000 clocks so worked, and the system was rapidly being extended there. Mr. Airy exhibited one of the clocks, and explained how, by means of a puff of air inflating a small bellows once every minute, the minute-hand was moved forward, the supply of air being admitted and cut-off by mechanism connected with a central clock, which was regulated by time-signals from an observatory. He also showed how a striking apparatus when required was attached to the clock, and kept wound up by means of the compressed air. The mechanism of clocks consisted simply of the tiny bellows and two or three spur-wheels, and scarcely ever got out of order. In Paris the clock was supplied, driven, and kept in order for a small yearly tariff,—a very much smaller sum than most people paid nowadays for keeping their clocks going. The modern clock was an abominable instrument. It cost a good deal of money in the first place, a great deal to repair and keep it clean, and in many establishments there was an annual sum paid to keep the clocks wound up. All these expenses would be included in the small tariff charged for the compressed-air clock. The company in Paris also supplied a large number of clocks to the municipality. These were placed at crossings of streets, in squares, and in other public places. The contract stipulated that the company should pay a certain fine for every minute that the clocks were not going, but up to the present time not a single fine had been incurred. The system was in use over an area about one mile and a half long by three-quarters of a mile wide, and twenty or thirty miles of pipes were used. The air-pipes in Paris, like all the other pipes in the city, were laid in the sewers, but they might just as well be laid in the streets. Another possible offshoot of the main scheme was an improved gas-light, an incandescent gas-light. This also was already in operation in Paris,* and had given very great satisfaction, for it was a very beautiful light. Coal gas and air were introduced simultaneously, but by separate pipes, into the interior of a burner consisting of a globe of steatite surrounded by a thin thimble of platinum. The steatite and platinum were pierced with a large number of small holes, through which the mingled gas and air issued and were burned. The steatite and the platinum became incandescent, and gave a light as good as the electric light for selecting fabrics in shops, and purposes of that kind. The light was also an extremely good one for street lamps, because, being an incandescent light, it was perfectly steady.

Mr. Arnold Lupton, speaking as one who had had considerable experience with compressed air, said he had no doubt that by its means power could be transmitted to every part of the district of two square miles and a half proposed to be served by the company, with the loss of, comparatively, a very few inches of water pressure. He certainly had heard of such a thing as a burst pipe, but it simply meant that there was a pipe gone, and no other harm resulted from it, the compressed air being a most harmless thing. Moreover, compressed air could be used as a means for ventilating rooms. He thought the only scientific mode of ventilating a room was to produce a *plenum* of pressure in the room, air being introduced through the proper openings in such quantities as to cause all the draught to be outward instead of inward, and therefore such as would not do any harm. Compressed air, too, had been applied to locomotives in mines with great success, and was equally suitable for tramways in streets, all that would be required being appliances resembling hydrants, at distances of a mile or half a mile, through which the engines could be supplied with fresh stores of air from the mains. The operation of re-charging the engine occupied about twenty-five seconds. The great advantage of compressed air was that there was no condensation in the pipes. They got their power at the other end, however long the supply-pipe might be.

Colonel Jones explained how compressed air had been used with great success at Eastbourne to force the sewage of the town out into the sea. He also suggested that it would be very useful in Birmingham for pumping chemicals, where metal pumps could not be used. In fact, an endless number of applications would be found for this power if they once got the mains laid in the streets.

Mr. Lawson Tait thought that the scheme was well worthy of attention from a sanitary point of view. The great difficulty of the Health Committee in dealing with the smoke-nuisance was in connexion with the small manufacturers, who could not keep a man solely as a stoker, and whom to fine continually would be to ruin them.

On the motion of Mr. Jaffray, seconded by Alderman White, it was unanimously resolved, "That, having heard the explanation offered, this meeting is of opinion that the Birmingham

* It has been exhibited in London.

Compressed Air Company's scheme is likely to prove a great advantage to power users in Birmingham, by offering them facilities which they do not now possess, and is worthy of public support.

RESPONSIBILITY IN SANITARY MATTERS.

Dr. Sieveking presided on Wednesday evening, December 17th, at the last of the lectures which the Sanitary Assurance Association have arranged this year at the Parkes Museum of Hygiene. The lecturer was Mr. Mark H. Judge, A.R.I.B.A., who delivered an address on "Public and Private Responsibility in Sanitary Matters." Mr. Judge began his remarks by asking his audience to consider whether there was any real cause for serious attention to the conditions under which we live; whether sanitary reformers, from Moses and Mahomed to Edmund Parkes and Florence Nightingale, had been right in the importance they had attached to man's environment. The answer to this must come from the physician, from whom the architect must be content to learn what conditions are essential to health, that he might be able to design dwellings so as to secure such conditions. The authority of Professor De Chaumont and Mr. Eric Erichsen was given to show that good sanitary conditions were not only essential to the maintenance of health, but often to the existence of life itself. Reference was made to the defects common to houses in all parts of the country. Speaking of main sewers, Mr. Judge said that they were specially within the province of the engineer, and that the best-constructed and ventilated main sewer was a piece of engineering with which the sanitary architect desired to have no direct connexion. Across the outfall drain he constructs a sanitary moat with iron draw-bridge for easy access in case of invasion from without or mutiny from within. Mr. Judge criticised the powers conferred on Local Boards and their surveyors, and said that they did not possess the qualifications which would warrant the Legislature in handing over to them the right to regulate the internal sanitary arrangements of our houses. He would strengthen the law by minimising its demands to essentials, and by insisting on its absolute enforcement. The responsibility of the individual owner or occupier should be increased, but in so far as the public authority pretended to interfere, he would make it a real interference, and in every case where the law was not complied with there should be some punishment meted out to those responsible for the breaches. Mr. Judge concluded by suggesting eight points, which, if embodied in the law, would define the duties of the public authority, and of the householder, in such a way as to improve the health of the public, and preserve the liberty of the individual. Of these suggestions the one to which most importance was attached was the second, viz., "Every house-drain to have between the house and the public sewer or common drain an air-chamber and disconnecting syphon trap, or an air-inlet disconnecting syphon trap, in a position where it can be readily inspected by the officer of the sanitary authority."

House Areas.—Some of the small areas upon which inhabited rooms in town dwellings are dependent for light and air are often productive of conditions prejudicial to health, and the limit, prescribed by legislation, of 100 ft. superficial, is subject to no restriction as to proportion, which is certainly to be regretted, since 10 ft. by 10 ft. is a very different thing from 20 ft. by 5 ft. Besides this, such areas are often carried to heights which render the access of a proper amount of light and air impossible. There is always a tendency, in these areas, for the air to become stagnant, especially in its lower strata. To remedy this, a device has been employed which we commend to the notice of all who are desirous of securing sufficient ventilation in confined areas. It is exceedingly simple and inexpensive, and it deserves mention from the fact of its being so frequently omitted in the construction of town dwellings. It consists in connecting one open area with another by means of a pipe or channel passing under the floors of the basement rooms. If it pass under a kitchen so much the better, for the heat of the fire will increase the draught, and promote a free circulation of air. —*Sanitary Record.*

THE ARCHITECT'S DEPARTMENT OF THE LONDON SCHOOL BOARD.

At the meeting of the School Board for London on the 18th inst., the Works Committee presented a report, from which we make the following extracts:—

"On the 20th of November the Board referred to the committee a letter from Mr. E. R. Robson, resigning his appointment as Architect of the Board. The committee have since carefully considered the question as to the appointment of Mr. Robson's successor. They are of opinion that the large experience which Mr. Bailey, the Assistant Architect, has had in connexion with the work of the Board since its commencement, renders him specially qualified to succeed Mr. Robson, and they have no hesitation in recommending that he be appointed as Architect to the Board. Mr. Robson, however, is prepared to complete the schools which have been planned by him, and the committee think it would be an advantage to retain his services for this purpose only, for which they recommend that he be paid as remuneration at the rate of 500*l.* per annum, for a period not exceeding two years. They propose that the salary of Mr. Bailey (which is at present 435*l.* per annum, and would have been 450*l.* on the 1st of January) should, on his appointment as Architect, commence at 600*l.* per annum, rising by increments of 100*l.* per annum to 900*l.*; and that he should be required to give the whole of his time to the Board. The committee do not propose to fill up the appointment of Assistant Architect, vacated by the promotion of Mr. Bailey, but they recommend that one of the existing officers in the Architect's department be promoted to the position of chief draughtsman, with a commencing salary of 250*l.*, rising by 12*l.* 10s. per annum to 300*l.* per annum. As Mr. Robson held the appointment of Surveyor as well as Architect to the Board, the committee propose that Mr. Young, the Assistant Surveyor, be now appointed Surveyor to the Board, and that his present salary of 435*l.* be increased to his maximum salary under the scale, viz., 500*l.* per annum. It is understood Mr. Young retains his private practice, which the Board, by their resolution of the 10th of November, 1881, permitted him to carry on. They accordingly recommend,—

That the resignation of Mr. E. R. Robson, the Architect of the Board, take effect on the 1st of January, 1885.

That Mr. T. J. Bailey be appointed Architect of the Board, from the 1st of January, 1885, at a salary of 600*l.* per annum, rising, by increments of 100*l.* per annum, to a maximum of 900*l.* per annum; and that he be required to give the whole of his time to the Board.

That Mr. E. R. Robson be employed to finish the schools which he has planned, a list of which has been submitted; and that he be paid as remuneration at the rate of 500*l.* per annum, for a period not exceeding two years from the 1st of January, 1885.

That one of the officers in the Architect's department be promoted to the position of chief draughtsman, with a salary commencing at 250*l.* per annum and rising by 12*l.* 10s. per annum to 300*l.* per annum.

That Mr. A. Yonng be appointed Surveyor to the Board, from the 1st of January, 1885, at his maximum salary of 500*l.* per annum."

In the course of the discussion which followed, Mr Urlin moved, and Miss Hastings seconded, an amendment to the effect that the annual increments of 100*l.* in Mr. Bailey's salary should be reduced to 50*l.* This was supported by Miss Helen Taylor, who said she was in favour of introducing entirely new blood into the Architect's department, and new ideas and practices into the building of the schools. The construction of many of the schools was radically deficient and faulty. Mr. Spicer, on the other hand, said there had been some very substantial improvements introduced into the schools of late years; and Mr. Heller said he could bear his testimony to the fact that the method of building the schools was in no way a crystallised system. The progressive character of the work of the Architect's department was a striking fact in connexion with the Board's history. That department had been engaged in gradually absorbing into their system ideas from all kinds of practical sources, and had striven to render the schools the best possible places for the masters and mistresses to work in. Mr. Bruce and the Rev. T. W. Webber expressed their opinion that the salary proposed to be paid to Mr. Bailey was too low, Mr. Webber saying that he was sure there was no other public body which employed an architect, demanded his whole time, and gave him such great responsibilities and so small a salary as did the Board in this case. Mr. Ross did not think the Board needed a specially-appointed architect. A gentleman could be called in whenever his services were required. The amendment was rejected by 21 to 16. Another amendment that the increments should be 60*l.* instead of 100*l.* was lost by 21 to 13, and the second resolution was agreed to, subject to an amendment (accepted by the Chairman of the Committee) binding Mr. Bailey not to undertake any other professional work. On the proposal of the Committee that Mr. Robson should be employed for two years at 500*l.* per annum to finish the uncompleted schools he has planned (sixty-two in number), an amendment to reduce the salary to 400*l.* per annum was negatived by 23 to 6, and the recommendation of the Committee was adopted, as was the remainder of the report.

SLATE DÉBRIS AND ITS UTILISATION.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.

An ordinary meeting of this Society was held on Wednesday evening, the 17th of December, the President, Mr. Thomas Cole, A.M.I.C.E., in the chair, when a paper, illustrated with experiments, was delivered by Dr. G. Selkirk Jones, F.C.S., upon "Slate Débris and its Utilisation." The author, after describing the composition and geological formation of clay slate, called attention to the various substances which in the laboratory he had obtained from waste slate (or *débris*), such as crystallised alum, so much in demand as a mordant in calico-printing and other processes; secondly, a new filtering agent for sugar refining and water purification, this substance containing a large percentage of carbon; thirdly, a substance which he named "Argilline," to be used in conjunction with lime for the chemical precipitation of lime. The author then showed an aluminate of peculiar composition, possessing good detergent properties, and which, he said, had already found much favour among wool and silk scourers, its efficacy as a detergent being due, firstly, to its powers as a remover of grease, &c.; and, secondly, on account of its harmless action upon those delicate fabrics, the curl of the wool being uninjured, and the silk freed from the so-called gum without damaging the fibre. The slate *débris* was next shown in its prepared condition for the manufacture of French chalk, pigments, fullers' earth, earthenware, cement, and concrete. Another feature of slate *débris* utilisation was also pointed out, viz., the manufacture of good and substantial bricks, sanitary and other tubes, tiles, &c. The author showed by experiment the cleansing of dirty wool, selecting the worst specimen he could obtain. He also precipitated the solid matter from a gallon of very offensive sewage-water, leaving the effluent bright and comparatively pure. In speaking upon the question of sewage purification, and of our possible visitor, the cholera, the author remarked that this was not a question so much of cost as of national importance. From a sanitary and hygienic point of view, what, he argued, was 5,000*l.* or even 10,000*l.* a year outlay compared with the incalculable advantages of pure drinking-water and the prevention of zymctic diseases among the community?

The exclusive rights in respect to the foregoing have been secured at home and abroad.

AN ART GALLERY, MUSEUM, AND SCHOOL OF SCIENCE FOR ABERDEEN.

The new Art Gallery has been erected on a site in the Schoolhill, from plans prepared by Messrs. Matthews & Mackenzie, architects, Aberdeen, whose plans were selected in competition. It is in the style of the Italian Renaissance, and has a frontage of 130 ft., with a depth of 90 ft., while its height towards Schoolhill is 42 ft. It is wholly built of granite, the lower part of the wall, to the height of 9 ft., being of rough stone, of a pink colour, from Correnie; the general wall-face is of light-grey granite, from Kenmay; while the more ornamental features of the design are worked out in dressed pink stone, which has a lighter colour than the same material in its unhewn state. The prominent feature of the front elevation is a portico, with two Corinthian columns, fluted at the lower end, and having the capitals carved out of the solid granite. The outer pilasters, two in number, have massive base-pieces and capitals. The doorway is arched, and has for keystone a head of Minerva, from a model presented by Sir John Steell, R.S.A., to his native city, and which has been reproduced in granite by Mr. G. L. Jamieson, of the Crown Granite Works. Over the doorway, in the centre of the portico, is an oblong recess, in which it is intended to place a figure group representing the fine arts. This piece of sculpture, which is the gift of Mr. Macdonald, of Kepplestone, is from a design by Mr. Lawson, London, and will also be in granite. On each side of the porch is a range of four square-headed windows, placed high in the wall, so as to secure for the interior a top light. These are finished with moulded architraves and cornices, and are each surmounted by a circular medallion, which may afterwards be sculptured. The main cornice, of dignified proportions, is carried over the entrance porch in the form of a large enriched pediment. The work has, for the most part, been done by local tradesmen.

The new School of Science and Art is to be presented to the city by Mr. Robert Gray, of the firm of Mackinnon & Co., engineers, a member of the Town Council, and a director of the Mechanics' Institute, in which vigorous science and art classes have been conducted in the evenings for many years. The building is at present in course of erection on the east side of the entrance to Robert Gordon's College. It has been designed by the same architect, and in its general features is almost a duplicate of the Art Gallery and Museum. Its frontage to the School hill is shorter, being 92 ft., as compared with 160 ft., and its porch, which projects further, and is more ornate, has four Corinthian columns, instead of two in the Art Gallery. The entrance-hall of the school is 27 ft. by 22 ft., and from it a similar staircase as in the Art Gallery leads to the second floor. The retiring and attendants' rooms are extended on the left of the entrance-hall, while to the back is the model-drawing and elementary room, 66 ft. long, 28 ft. wide, and 18 ft. high, well lighted from the north by a range of high-set windows. On the west end of this large hall is a modelling studio, 20 ft. square, and on the right of the entrance-hall a lecture-room, 29 ft. by 21 ft. On the upper floor is a ladies' studio, 29 ft. by 21 ft.; the antique room, 49 ft. by 28 ft.; a painting studio, 28 ft. by 17 ft.; a room for the life class, 28 ft. by 20 ft.; an apartment for the master, and suitable cloak-rooms and lavatories. All the rooms of the upper floor have top lights It is intended to unite the art gallery and the museum with the School of Science and Art by means of a handsome gateway thrown across the entrance to Robert Gordon's College, which, as those who are acquainted with Aberdeen know, is set far back from the street in the middle of extensive grounds. The design shows a triple archway, 50 ft. in length, the central archway 21 ft. across, and 19 ft. high, the flanking archways being about half that width. Above the archway a corridor, 9 ft. wide, is introduced, with a small apartment in the centre, in which pictures might be hung. This archway would cost about 1,000*l.*, of which (according to the *Scotsman*) the Art Gallery Committee have offered to pay one-half.

APPOINTMENTS NOT UNDER SEAL.

SCOTT *v.* THE GREAT AND LITTLE CLIFTON SCHOOL BOARD.

THE plaintiff in this case (upon which judgment was pronounced by Mr. Justice Mathew, sitting in the Queen's Bench Division of the High Court of Justice on the 20th inst.) was an architect, who sought to recover from the defendants, the School Board of the Great and Little Clifton District, a sum of about 90*l.* for services rendered in preparing plans for and superintending the erection of a school for the defendants.

The case was tried before Mr. Justice Mathew, without a jury, at the July Assizes at Carlisle, when it was conceded by the defendants that the plaintiff had, in fact, executed the work, orders for which had been given him by the Board, and had been agreed to by a resolution of the Board duly entered on their minutes. The defendants, however, refused to pay the plaintiff, on the sole ground that his appointment was not under the seal of the Board, and, inasmuch as it related to work of above the value of 50*l.*, was not binding upon the Board.

The case came on upon further consideration on the 22nd of November, and was argued at some length, the defendants' counsel resting their case mainly upon the cases on the subjects of contracts by Corporations from "Clark *v.* The Guardians of Cuckfield Union," reported in 21 *Law Journal*, Queen's Bench, p. 349, down to "Young *v.* The Corporation of Leamington," reported in "Law Reports," 8, Appeal Cases, p. 518, in which it had been decided that Corporations could avail themselves of a defence similar to that set up in the present case.

His lordship now gave judgment in favour of the plaintiff, and said that although it was true that by sec. 30 of 33 & 34 Vic., c. 73, a School Board was made a body corporate, with perpetual successors and a common seal, yet the same statute contained further provisions with reference to its proceedings, and these would seem to render the cases relied on by the defendants inapplicable; and his lordship said that if it were necessary for the decision in this case he should hesitate to look upon those cases as a safe guide in cases like the present, where the contract was for a purpose incidental to the performance of the duties of the corporate body, such necessity having been evidenced by proof that the corporation had, with full knowledge of its terms and of all the facts, acted upon it, and taken the benefit of the performance. His lordship, however, held that the plaintiff was entitled to recover upon another ground, namely, that afforded by sub-sec. 6 of sec. 30 and rule seven in the third schedule. By these it was provided that the appointment of any officer of the Board might be made by a minute of the Board signed by the chairman and countersigned by the clerk of the Board, and that any appointment so made should be as valid as if it were made under the seal of the Board. The plaintiff had been so appointed architect to the Board, and the subsequent orders for the execution of the plans were given by the minutes of the Board, properly signed, and his lordship was of opinion the plaintiff's appointment was within the meaning of that section,—that of an officer of the Board.—*Times.*

MARCH'S PATENT STREET-SWEEPER AND ELEVATOR.

ON Friday, the 19th inst., a trial was made in Grosvenor-place and in some adjacent roadways of this ingenious machine, which is the outcome of much patient thought and experiment on the part of its inventor. The machine, as its name implies, not only sweeps the road, but lifts the mud or slop into the cart or wagon to which it may be attached. The machine is made in two forms, known as Nos. 1 and 2. The machine known as No. 1

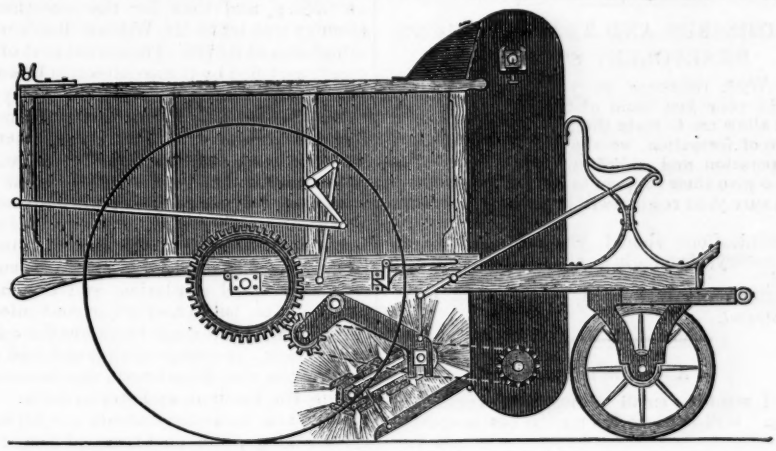


Fig. 1.

is shown in fig. 1. This is the form in which the machine is placed in front of the cart, and permanently combined with it, the elevator in this case coming between the driver's "dickey" and the cart. Machine No. 2 is shown in Fig. 2.

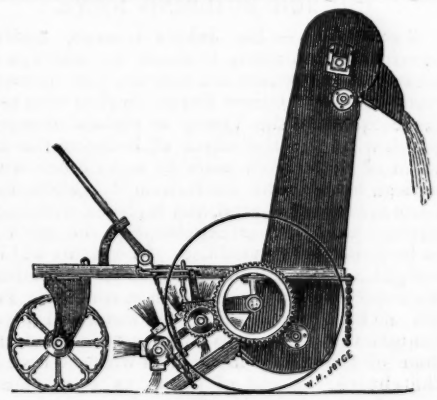


Fig. 2.

This is made to couple on to the back of a cart or wagon, and is instantly attached or detached. Machine No. 1 would have advantages in some circumstances, as, *e.g.*, in keeping clean the streets of crowded cities where the traffic might be slightly interfered with by having to connect and disconnect the machine as often as the cart or wagon became full, as would be necessary with Machine No. 2; but this advantage would be dearly bought if the "tip" or depôt for the contents of the carts were at any great distance, seeing that to empty the cart the machine would have to be dragged with it. In both machines the working parts are essentially the same. A chain of revolving brushes sweeps the mud, dust, or slop up an inclined pan into the elevator case, the buckets of which, mounted on endless chains, discharge their contents on to the shoot projecting over the cart. On lowering the hand lever, the small spur wheel which is keyed on to the front shaft of the chain of brushes is withdrawn from the spur ring attached to the off road-wheel. Further depression of this lever raises the brush-pan and brushes. In starting to work, the lever is raised, and the different parts resume their former position in the reverse order. A pair of right-and-left threaded screws, with elongated nut, connects the hind shaft of brushes to the pan, and enables the brushes to be brought down to their work as they wear away. The front shaft of brushes is also lowered by a screw which passes through the angle frame of the machine, and supports the small end of a horizontal lever, centred on the collar of the axle. The small upright lever which holds the front shaft of brushes works upon a pivot running through the horizontal lever. The brush-pan being hinged to the elevator case is free to rise and fall, also the rear shaft of brushes connected thereto. The elevator is driven by another spur ring. A long upright lever is centred at the lower end upon the lower shaft of the elevator. Upon this shaft is keyed a small spur-wheel which gears in an upper spur-wheel keyed to a short shaft which revolves in a boss of the lever itself. The two small spur-wheels are, therefore, always in gear, and the upper one is moved in or out of gear with the spur-ring by the long upright lever. At the top of this lever there is a pin which slides in a slot at the end of the shoot lever, whereby the shoot is raised or lowered simultaneously with the movement of the gearing below.

The trials made on Friday morning were, on the whole, very successful, and we trust that Mr. March's perseverance may be rewarded, and the comfort and health of the public promoted, by the wide adoption of his machine in London and other large towns. Of course, an extra horse is required to draw the wagon and No. 2 machine, but the spare horse should be abreast of the shaft horse, the shafts being made purposely to slide instantly from the middle to the "off" side, and *vice versâ*, for that purpose, the spare horse being attached by a leading-bar or whipple-tree to a hook on the fore-carriage. A lad is also required with this machine to work the lever for throwing the machinery into or out of gear. It is claimed for the machine that, going at the rate of three miles an hour, it will sweep thoroughly 1,200 square feet a minute of any road; that any worn or broken part can be replaced in a few minutes, duplicates being kept; that macadam roads swept by the machine will last longer than those swept by hand or by the one-revolving-brush machine; that varying brush pressure can be applied, according to the nature and quality of the road, or of the material to be swept; and that the machine sweeps and elevates other refuse, besides mud and dust, such as cabbage leaves, straw, &c.,—a qualification which should commend the machine to the Duke of Bedford for use at Covent Garden. Obviously the employment of the machine would dispense with those offensive heaps of mud which, in many parts of London, sometimes wait a day or two at the roadside for the leisurely collecting cart or wagon to come round, becoming more or less dispersed over the roadway and pavement, or on the clothing of wayfarers, in the meantime.

The inventor has not yet had an opportunity of testing his machine as a means for clearing the streets of snow, but he says that if the snow were dealt with, as it is in Berlin and other large Continental cities, directly it begins to fall, his machine would pick it up. The patent provides for scrapers in lieu of brushes, if needed, to deal with deep or partially hardened snow, and though a few experiments may be necessary before the machine is brought to deal with snow efficiently, we understand that its adaptation to such a purpose has throughout formed a prominent feature of the machine in the mind of its inventor.

A Builder's Mausoleum.—A costly mausoleum is at present in course of erection in the cemetery at Wimbledon, by the family of Mr. B. Cooke, builder and contractor, of Battersea, who died a short time ago. The mausoleum, which measures 9 ft. by 7 ft. externally, is faced with Portland stone and red and grey polished granite. Above a base in Portland stone the frontages are faced with columns and panels in red granite, up to a height of about 8 ft. above the ground-level. These are surmounted by a cornice in stone. Above the panels there are double arched windows. The structure is surmounted by a dome. The entrance is on the north side, leading by a flight of steps down into the vault beneath, 10 ft. in depth. The mansoleum was designed by Mr. J. T. Armstrong, architect.

PAINT ON FRONT DOOR.

Sir,—I have a front door that after being made and hung ten years still exudes resin, or whatever the thick liquid is that warmth frequently brings out of red deal and similar woods. The door when new was treated in the usual way,—knotted and painted four coats, and five or six years afterwards was re-painted, the parts exuding this moisture being scraped bare and again knotted; but this did no good. Two or three years afterwards, all the paint was burned off the door, and the door again re-painted, and still the same oosing takes place. Now how to remedy this I really cannot tell. It is not caused by knots in the wood, but comes from the grain. Would any of those paints do that are made to stand tropical heat? If they would, are they made fine enough for a front door, or only fit for rougher purposes? It takes but little heat to draw out this moisture. Soon after it was painted the last time (in the month of April), a little afternoon sun in that month was able to bring up blisters and show the moisture behind them. If any of your experienced readers could and would give their advice on this, I should feel obliged. H. G.

THE OMNIBUS AND TRAMWAY MEN'S BENEVOLENT SOCIETY.

Sir,—With reference to your notice of this Society in your last issue of the *Builder* [p. 839], will you allow me to state that, as the Society is yet in course of formation, we shall be glad to welcome the co-operation and aid of any gentlemen who are willing to give their support to so worthy a project, as I feel sure your readers will at once recognise this to be?

Communications should be addressed to the hon. secretary, from whom all information can be obtained.

Heron B. Verity, Hon. Sec. *pro tem.*
182, *Strand.*

A QUESTION.

Sir,—I want a small atmospheric engine for churning. Will any one tell me the best maker?

A. P.

PROVINCIAL NEWS.

Leeds.—An important extension of the building known as the St. James's Hall Coffee Palace, Leeds, has lately been completed, the building now being one of the largest of its kind in the kingdom. Although Mr. W. J. Armitage, of the Farnley Ironworks, had expended upwards of 13,000*l.* on the hall as it stood up till recently, such success has attended the work carried on here that he has found it advisable to carry out considerable extensions, the cost of which, including land, will be about 10,000*l.* more, making the cost of the whole block about 23,000*l.* The new wing comprises the following accommodation, namely, on the basement, large provision stores; on the ground-floor, new first-class dining-room, 34 ft. by 20 ft., with an additional bay or alcove, 13 ft. by 7 ft. 6 in. This room is fitted up in a superior manner for better-class customers. The walls have a dado of ornamental glazed faïence, and the ceiling is handsomely panelled with moulded ribs, with ornamental cornice and deep frieze. Adjoining this hall is a new entrance from York-street, from which a handsome stone staircase ascends to the top of the building. A further entrance is provided from the cross street between York-street and the Market, with stone stairs giving access to the basement and the upper regions of the edifice. The present dining-room in the existing building having been found too small, it has been materially enlarged by the addition of the two small rooms adjoining. Ascending from York-street, on the first floor, is a ladies' coffee-room, 17 ft. by 15 ft. 6 in. On the second and third floors bedroom accommodation is provided, whilst the topmost floor is used as a kitchen. The principal rooms of the building are warmed by hot-water pipes. In carrying out the new wing it has been the aim of the architect to let it harmonise with the existing structure so far as the leading lines are concerned; but he has chosen a later phase of Gothic, tinged with some Flemish characteristics. The building has been erected from the designs and under the superintendence of Mr. William H. Thorp, of Leeds. The original contract, amounting to a little over 5,000*l.*, was let to Messrs. Franks & Evans, of Skinner-lane, Leeds, but some additions have been made.

Exeter.—A bookcase and cabinet combined made in oak and walnut from the designs of Mr. Octavius Ralling, architect, together with a gold watch and illuminated address, has been presented to Mr. Casley, of this city, as a token of appreciation by many friends, of his work in the cause of temperance and thrift among the working classes. Mr. J. R. Gibbard, builder, was the maker.

West Bromwich.—The new infirmary and laundry which have been erected in connexion with the West Bromwich Union were formally opened on the 18th inst. The buildings have been erected on land which was purchased in 1880 at a cost of 1,542*l.* Eight sets of designs were received for the buildings and reported upon by Mr. Thomason, of Birmingham. The plans accepted were those of Mr. William Henman, of Birmingham, and these plans were sanctioned by the Local Government Board after various minor alterations, and they are those which have been carried out. Twenty-two tenders were received for the infirmary work, and the lowest, that of Messrs. Stockton & Son, of Oldbury, for 10,800*l.*, was accepted. The contract for the boundary walling, railing, and gates was let to Mr. W. Bennett, of Sedgley, at 958*l.*; and that for the erection of the laundry was let to Mr. William Robinson, of Birmingham, at 3,570*l.* The actual cost of the infirmary, certified by the architect, is 12,447*l.* 3s. 2d. Accommodation is provided for 224 patients of three classes, viz., 170 ordinary, 44 contagious, and 10 infectious. The arrangement of the wards is upon the "pavilion" system, and they are placed north and south, so that the sun's rays may fall on each side during some portion of the day. The East Pavilion is for women, the West for men. Each contains, in addition to four large and two small wards, two nurses' rooms or ward sculleries, and two large day-rooms; also, baths and other conveniences. In the centre of the main block are the administrative offices, providing sitting and bed rooms for the nurses, the dispensary, the house-surgeon's rooms, the kitchen, and store-rooms. The contagious and infectious wards are separate from the buildings, and so arranged that each ward may be entirely isolated. None of the buildings exceed two stories in height, the staircases are all of stone, and numerous hydrants have been placed in convenient positions around the premises.

CHURCH BUILDING NEWS.

Westminster. — St. John's Church, Smith-square, Westminster, is about to undergo a series of important alterations, the present rector, the Rev. Canon Furze, having obtained the consent of the Vestry to certain changes, which will have the effect of bringing the interior of the church more in accordance with modern ideas. The old-fashioned high-backed pews are to be removed, and replaced with open sittings, while the arrangement of the seats is to be considerably modified. The result will be a slight loss in accommodation so far as numbers are concerned, but a great gain in comfort. The old method of heating by means of pipes beneath the pews is to be superseded, and the floor of the seats will be level with the floor of the church, instead of being, as now, raised some inches above it. The pulpit, which now stands immediately in front of the altar, will be removed to one side of the church, and the reading-desk will occupy a position immediately opposite. A faculty has been applied for, and when it is obtained the church will be closed for some three months. The cost of the work is estimated at 800*l.*, and the plans have been prepared by Mr. Butterfield, who will superintend the carrying out of the alterations.

Govan.—The foundation-stone of the new Govan Parish Church was laid on the 6th inst. The new building, which has been designed by Mr. R. Rowand Anderson, LL.D., of Edinburgh, stands in the northern end of the churchyard, and on the site of the former parish church, which has been pulled down and re-erected on another site in Govan. The new church is a much larger building than the one it replaces. It consists of a vestibule, over which is a gallery; then a nave with narrow side aisles, used only as passages; a transept on one side; a choir with side aisles, one of which is for the organ; a hall or chapel capable of holding 250 people; and a tower and spire or the north side, isolated from the church, but connected with it by a corridor. Advantage is taken of a fall in the ground to provide vestries, session-house, and beadle's apartments under the choir. The bulk of the congregation will be seated in the nave, the remainder in the transept and choir aisle. The nave is 98 ft. long and 41 ft. broad, and the aisles are 5 ft. wide. The choir is 30 ft. long and 22 ft. broad. The hall is 40 ft. long and 20 ft. broad. The total height of the tower and spire is 258 ft., and the width at the base is 35 ft. The architecture is of an early type, such as is seen at Pluscardien Abbey. The cost of the new church will be 17,000*l.*, but this does not include the tower and spire, for the erection of which there are at present no funds. The contractors are: — Mason and joiner work, Messrs. J. & D. Meikle, Ayr; slater's work, Mr. A. D. M'Kay, Glasgow; plumber's work, Mr. John M'Feat, Govan; plaster-work, Mr. R. A. M'Gilvray, Glasgow; gas-fitting, Messrs. R. M. Eastdale & Co., Glasgow; measurer, Mr. W. H. Dinamore, Bath-street, Glasgow; and clerk of the works, Mr. George Kermack, Glasgow.

Wilton.—Some improvements have lately been made in Wilton Church. The vestry, which was built some fifty years ago, has been pulled down, and an ancient window of the north aisle, which was partially blocked by the vestry, and two buttresses, have been restored. A new and more commodious vestry has been erected to the north of the chancel, with Ham stone doorways and windows and an open-timbered roof. Underneath it has been formed a chamber for a warming apparatus, the church having been recently fitted by Messrs. John King & Co. with their patent small tubes at a cost of about 80*l.* The three windows at the east end of the nave, over the chancel arch, have been filled with painted glass by Messrs. Clayton & Bell, the late Mrs. Acton (*née* Kinglake) having made a donation for this purpose. The central subject is the Sermon on the Mount, with the Virgin and Child and St. Mary Magdalene in the two side windows. The vestry has been built by Mr. John Pearse, of Minehead, builder, from the plans and under the superintendence of Mr. Houghton Spencer, architect.

Tytherington.—Several alterations have recently been made in the picturesquely-situated parish church of St. James, Tytherington. The church, both inside and out, has been in a dilapidated condition for some years past. About twelve months ago the project of arranging for the restoration of the church was seriously entertained, and the task of preparing the plans for the alterations and seeing them carried into effect was entrusted to Messrs. Pope & Paul, architects, of Bristol, while the building contract was given to Messrs. Roach & Son, of Charfield. The work was commenced some six months ago, and the work is now completed. Previously to the alteration, the nave was covered in with a flat ceiling, but this has been removed, and the original oak rafters of the church left exposed, which not only gives a more lofty appearance, but is more in keeping with the general character of things. Considerable alterations, including a new arch, have been made in the chancel. The old-fashioned heavy-looking pew boxes have been removed, and their places supplied with light open seats of pitch-pine. The chancel roof is entirely new. In the chancel new clergy seats and choir stalls have been fixed. These are of massive English oak, and are the work of Mr. Harry Hems, of Exeter. Mr. Hems has also executed the carving on the chancel roof, and has carved a reredos in Caen stone, which occupies the entire width of the eastern end of the chancel. The tower screen, the lectern, the font cover, and altar-rails are also all new, and of oak. The church has been heated throughout by hot-water apparatus, supplied by Mr. Weech, Maudlin-street, Bristol. The entire cost of the alterations is estimated at about 1,500*l.*

ROMAN CATHOLIC CHURCH-BUILDING NEWS.

Nottingham.—During the past twelve years a school and chancel have been added to St. Norbert's Church, which has now been further embellished and decorated by M. Modeste Van Aerschodt, a Belgian artist, and lately a pupil at the Academy of Painting at Antwerp.

Deptford.—The Church of the Assumption, built some years ago, has just had the high altar enlarged and completed, from the design of Mr. Fredk. A. Walters. An elaborate terra-cotta diaper, let into panelled stonework, extends upwards to a height of 6 ft., above which are a series of seven niches, with richly crocketed canopies surmounted by a carved and embattled cornice. Each niche is filled with an angel bearing the emblems of the Passion, the Blessed Virgin occupying the centre. The

reredos is flanked at each end with traceried and canopied buttresses, finished with the "Pelican" and "Agnus Dei" respectively. The work has been executed by Messrs. Earp, Son, & Hobbs, of London and Manchester.

STAINED GLASS.

West Kensington.—Four Munich windows have just been inserted in the Church of St. Mary, West Kensington, three in the chancel and one in the transept. The chancel windows represent Christ and the Syro-Phœnician woman, the Marriage Feast of Cana, and Christ healing the Sick; while in the transept the subject of our Lord blessing little children is introduced. The windows are by Messrs. Mayer & Co.

Endon.—A four-light stained-glass window, depicting Scriptural scenes, and including tracery, has, during the last few weeks, been erected in St. Luke's Church, Endon, by Messrs. Jones & Willis, of Birmingham and London.

Wilmslow.—A three-light Munich window has been lately inserted in the Parish Church of Wilmslow. It represents Martha calling Mary to the Master, John xi. 28, and is carried out in accordance with the architecture of the church, thirteenth century style. The architects are Messrs. Mayer & Co.

Hunslet.—Stained glass has now been inserted in one of the large north transept windows of Hunslet parish church, Leeds, by way of memorial to the late Richard and Ann Dobson, of Middleton Grange, Messrs. Powell Bros., of Leeds, were the artists entrusted with the work.

Zanzibar.—In connexion with the Universities Mission to Central Africa, a three-light stained-glass window, to be erected in Zanzibar Cathedral, in memory of the late Mr. Keith Johnston, by his mother and sisters, has been executed in Rust's varied antique glass, by Messrs. S. Belham & Co., 155, Buckingham Palace-road.

Shadwell.—A small Munich window, by Messrs. Mayer & Co., representing St. John the Evangelist, has just been placed in St. Peter's Church, London Docks, in memory of the late Mr. H. Rome Barton, eight years churchwarden of the parish.

The Student's Column.

THIS is a week in which most of us are not bent on very serious study, and as our next subject for the Student's Column constitutes, like most of the previous ones, a series of articles on a special branch of study, we do not care to break it by commencing in the last number of the year. Instead of that, we will take the opportunity of saying a word as to this corner of the paper, and what we hope to do with it,—a word for ourselves and for our student friends at the same time.

It has never been intended that the *Builder* should be in its main scope, or in regard to the bulk of its matter, a paper for students or draughtsmen. It is rather intended to be addressed to the most educated section of the profession, and also to those persons (a large number) outside the profession of architecture who take an intelligent interest in architectural subjects. But we have wished to set apart a portion of our space in which to address those who are entering on the study of architecture as learners, and who may find it useful to have practical and artistic subjects treated of from their commencement, in plain language, and without assuming any knowledge on the part of the reader beyond just that general knowledge of what architecture is and what a building is, and what are the things to be chiefly thought of in carrying it out, of which every youth who has been for a few weeks, even, in an architect's office has some general notion. Having undertaken this, we have accepted it, however, as a serious responsibility, claiming, perhaps, in some respects more serious care than most other portions of the paper. It has been our effort and intention that everything set down here, in however plain and simple a manner, should be absolutely trustworthy, and that student readers may feel assured that in studying this column they are getting the best and soundest available information in regard to the subject treated of.

We commenced with some articles giving the outline of architectural history, as the background of the whole matter; and our proposal then was to take up in turn various practical subjects in connexion with building; for it is in these practical subjects that plain and trustworthy information is most difficult to get, and it is in practical knowledge that the young architect of this generation is most frequently found wanting. We are becoming too much of draughtsmen, too little of builders. We do not by any means intend to imply that the artistic side is not to be treated in this column, so far as it can be made a matter for instruction; but we hold that it is the practical and scientific side of the profession which it will be most useful for us to deal with at present. We have already given some articles on practical subjects, which, we believe, have been found valuable. These will be followed next by others of a similar class on very important subjects, in one or two cases on portions of architectural education which are mostly overlooked in England, and in regard to which the work of an architect affords in this country no instruction whatever. As time proceeds other subjects will come forward for treatment; those which have already been treated of in a general way will afford room for further consideration in a more detailed manner. There can be no limit to subjects, for we are always learning in architecture, or always ought to be, and new processes and materials are constantly springing up, and new wants crying out for attention, and too often not receiving it.

Let us point out also to our student readers that we are desirous to make this part of our paper a medium for giving direct answers to questions asking for definite information on points in regard to architectural history, or design, or construction. We do not wish to turn it into a correspondence column, which would take away what we believe to be its best use, but we wish our younger readers to understand that whoever wishes for special information is encouraged to ask for it here, and that no pains will be spared to give him a reply, not in a mere perfunctory way, but to give the best information that can be had on the subject, whatever it may be, provided that it be within the proper and recognised province of an architectural journal.

Let us add that we are very glad also to receive any suggestions from our younger readers as to subjects which they would think it specially useful to them to see treated in this column. It may not always be possible to comply at once with such suggestions, but they will always be duly considered and acted on where possible. There is one proposition, however, which has been made to us more than once, and to which we will take the opportunity of here replying, viz.: that these students' articles should be printed entirely on one page, or on a separate slip, for the purpose of being cut out and bound up by the possessor at the end of the year. There are some practical reasons against both suggestions, having reference to the convenience of printing and making-up a paper; but we may be allowed to add that the *Builder* is not published with the view of having one part cut out and the rest thrown away, and that we are afraid we cannot see our way to enter into special arrangements to facilitate that process.

That, we hope, however, will be regarded by our student friends as a minor grievance, which they will not think it worth while to quarrel with us about. We are doing the best we can for them according to our lights, and, expressing our hope to be able to be useful to them and to succeeding generations of architectural students, we take our leave of them for this year with the best wishes for their prosperity in the future before them, as well as the more immediate and seasonable wish of "A Happy Christmas to all."

Books.

Men of Invention and Industry. By Samuel Smiles. London: Murray. 1884.

A NEW work from the pen of Dr. Smiles is sure to attract the attention of a large circle of readers. Those who may wish to hear from him something more of the biographies of men of invention and industry will not be disappointed by the perusal of his new volume. In the biography of Phineas Pett, who became assistant master-shipwright at Chatham in 1601, we are told of the beginnings of English shipbuilding. In that of Francis Petitt Smith, who was raised to the honour of knighthood in 1871, and who died three years later, we have an account of the practical introduction of the screw propeller, now the chief appliance of steam navigation. And we have a glance at the later development of iron and steel shipbuilding in a very interesting autobiographical sketch of E. J. Harland, to whose energy is chiefly due the prosperity of the shipbuilding industry of Belfast. No human industry that has preserved any continuous history has shown such an evolution as that of the shipbuilder. Henry VIII., Dr. Smiles remarks, was the first to establish royal dockyards, first at Woolwich, then at Portsmouth, and thirdly at Deptford. The *Great Harry*, launched for this monarch in 1515, was a vessel "the like of which had never before been seen in England." She was rated at 1,000 tons. In 1815 the first steamboat was launched on the Thames, by Maudslay. In 1846 the steam navy of Great Britain consisted of 360 vessels, with a total capacity of 74,000 tons. In 1883 the number of steam vessels registered as belonging to the United Kingdom was 6,260, with a tonnage of 3,728,268 tons; the sailing vessels at the same time being 18,415, with a tonnage of 3,513,948 tons. The men employed, exclusive of masters, in this year, were 200,727, or one to every 35 tons of shipping. In 1872 they were 203,720, or one to every 28 tons of shipping. Such has been the economy of human labour effected by the steam-engine, in this department of industry, in eleven years.

The life of John Harrison gives occasion for an account of the invention of the marine chronometer, one of the greatest gifts ever bestowed on the navigator. In the life of John Lombe we have an account of the introduction into England of the silk industry, or, rather, of that fundamental portion of the manufacture which consists in the production, from the cocoon, of organzine or thrown silk. Machinery for this purpose existed in Savoy, where its construction was regarded as a state secret, to be kept on penalty of death. John Lombe obtained employment in a silk-mill in Piedmont, found means to see the engine, fled the country at the risk of his life, and took out a patent in London for the organzining of raw silk in 1718. With the aid of his brother Thomas, who was afterwards knighted, and received a grant from Parliament of 14,000*l.* as "a reward for his eminent services done to the nation in discovering, with the greatest hazard and difficulty, the capital Italian engines, and introducing and bringing the same into operation in this kingdom," he erected silk-mills at Derby about 1720. Nearly 64,000 persons are returned in the census of 1881 as engaged in the silk industry. Dr. Smiles, however, says that "in 1850 the number employed in the silk manufacture exceeded a million persons." He does not give his authority for the statement. There has been a decline in the number of persons employed in the decade 1871–81, from 82,053 to the number before given, but the whole number of "persons working and dealing in textile fabrics" in 1881 is only given on the census returns at 1,053,648.

William Murdoch was born in 1754, in Ayrshire, where his father was a millwright. In 1777 he obtained employment at Soho Works, under Boulton and Watt, and became the right-hand man of the great inventor of the steam engine. He was the practical inventor of gas-lighting; and his biography is one of no little interest.

The invention and introduction of steam printing occupies three of Dr. Smiles's chapters; the inventors chiefly mentioned by him being Frederic Köenig, "the Walters of the *Times*," and William Clowes. There is an interesting chapter on that almost if not wholly unique incident in the last century of the history of Ireland, the establishment of the admirable system of cross-country cars, by the Italian, Charles Bianconi. The above, with a final chapter on some less known astronomers and students in humble life, make up the contents of this very readable book.

Sketches in Spain, from Nature, Art, and Life. By John Lomas. Edinburgh: Adam & Chas. Black. 1884.

The writer of this book has divided his matter conveniently into routes, which are, moreover, clearly shown on a very good map affixed to the book: with this exception the work is sadly wanting in method. Scraps of history, of archæology, criticisms of art, and descriptions of nature are thrown together pell-mell, not

arranged as a mosaic, but tumbled promiscuously into a sort of loose incoherent conglomerate. He has, moreover, the unfortunate habit of wandering from subject to subject and back again, visiting and revisiting the same spot and mixing up his remarks in a manner which is most perplexing to the attentive reader. It is often difficult to understand what particular church, cathedral, or other subject he is referring to, and sometimes almost impossible to make out what his real feelings are respecting them.

As an instance we may cite his remarks upon the cathedral at Burgos. The subject is taken up on p. 32, but, after a few lines, the writer passes to San Sebastian, and follows with ten or a dozen discursive pages about many things. On p. 44 he returns to the cathedral, picking up the forsaken thread of his description. Collecting his remarks thereon we learn that at first sight the cathedral is disappointing,—even vexing; that one's artistic sensibilities are outraged by the poor west front, the damning *Coro*, the mixture of architectural styles, and the all-pervading over-decoration of the interior; that, nevertheless, its beauty is glorious, its defects comparatively small; and that it is, after all, "one of the noblest specimens of Gothic work upon the face of the earth!"

The west front is only poor in its lower or modernised part, where the Palladian doorways are thrust under the old pointed arches; above it is singularly elaborate. Nor is it "at first sight" that this and so many other Spanish buildings are "disappointing and vexing." Their *ensemble* is almost always captivating. Disappointment comes with scrutiny and the discovery how little thought has gone to the production of such an efflorescence of mechanical ornamentation.

The really interesting facts about Burgos Cathedral the writer has left out of sight,—that its late external architecture conceals an early church of great simplicity and beauty; that it is a reproduction of a French type; and that its founder, Bishop Maurice (1213–1238), was almost certainly an Englishman. It is quite certain that he travelled on important embassies in France, and it is credible that he brought thence,—as tradition affirms,—a French architect, who designed the cathedral, which the good bishop commenced to build within a few years of his consecration.

The writer succeeds best in dealing with natural scenery, having a keen sympathy with nature, and considerable facility in expressing effects of colour; but even here it is difficult to account for his selection of subjects. The Bay of Algesiras,—certainly one of the loveliest in the world, if not quite the most lovely,—is dismissed with a single epithet; and the writer "drops" provokingly into some commonplace reflections on the "strategic value" of the Rock of Gibraltar, and the inexpediency of surrendering it to Spain,—made, as it is, for the "arbitrage" of the Mediterranean,—a vile phrase; "arbitrage" is a vile phrase.

Every one who cares for the architecture of Spain will find something to interest him in this book. And every one who peruses it will feel with us, in some way or other, a sense of disappointment. It is perhaps too much to expect an adequate treatment of the subject without the aid of pictorial illustrations; but something more could have been accomplished than the author has given us. His sketches fail in the first requisite of a sketch, for they leave no definite impression upon the mind. He cautions the tourist against endeavouring to cover too much ground, and so run the risk of seeing nothing as it should be seen. The caution is a wise one. But a similar danger besets the author, and we would willingly exchange the book he has given us for a smaller number of really careful sketches by the same hand.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

2,528, Ventilators and Cowls. J. M. Lamb.

This improvement consists in fitting a taper or cone-shaped piece, with an open top on to the shaft. A hood and cover surmount the cowl, and an outer large inverted cone surrounds the inner one. Divisions are fixed so as to divide the cylindrical shaft into four separate parts, and deflect the currents of air. For chimney-cowls, some modifications are effected by leaving out or re-arranging the cones and divisions. This arrangement whereby deflecting currents of air are induced so as to exhaust the air from the shaft, is the novelty in the patent.

2,686, Preventing the Rattling of Window-sashes. A. B. Johnson.

Two small levers are secured to the beads on each side of the sash, in such a manner that the short end of the lever acts as an eccentric, and when the long end of the lever is moved away from the sash, the short end presses the sash against the parting bead, and, pressing the meeting bars together, also prevents rattling. It also prevents tampering with from the outside, and gives an additional security.

350, New Method of Inlaying Wood, Henry Forrester.

A composition for wood or ivory is substituted on the material to be inlaid. The pattern is engraved, sawn, or etched in the usual way, and any composition is poured and rammed into the design, which composition will afterwards harden and resemble ivory or wood inlaid.

1,029, Parquet Floors, F. F. Brown.

The tiles for these floors are constructed of a number of squares of end wood arranged that no two adjacent ones shall have their grain in the same direction. The squares are united by glue, and are held in some convenient frame when setting.

2,365, Cupola Furnace, W. Glaze.

In cupola for smelting iron and steel the tuyeres are placed nearer the bottom than usual. It is also made widened out at bottom.

4,635, Concrete Building, W. J. E. and E. J. E. Henley.

In the apparatus for building, uprights are fixed at intervals, and between these are arranged boards fixed at their ends to plates, which, in turn, are bolted to the uprights by two sets of bolts,—an upper and lower. The two sides of the boards are identical, so that when a layer of concrete has been laid and set, by unloosening the lower bolts the boards can be swung round the upper ones as centres, and so be in place for another layer. There are distance pieces to regulate the thickness of the wall. The cores for flues are of metal, capable of a slight collapse, so that they may be withdrawn when the work is finished.

APPLICATIONS FOR LETTERS PATENT.

Dec. 12.—16,338, H. Agar, Improved Hook for Hanging Pictures.—16,339, J. Thomas, Fire and Burglar Alarm.—16,348, D. J. Jones, Improvement in Window Frames.—16,378, J. C. Murphy, Combination Bookcase and Bedstead.

Dec. 13.—16,398, W. H. Baraclough, Venetian Blind and other Cord Holders.—16,409, J. McIntyre Shaw, Improvements in Cooking Ranges.—16,431, A. Myall, Grates and Stoves.—16,432, F. Knott, Apparatus for Drawing Ellipses.

Dec. 15.—16,444, R. Holt, J. Holt, and J. Yates, Preventing Smoky Chimneys and Ventilating Rooms.—16,452, B. C. Budham, Combined Manhole Covers and Ventilators for Sewers.—16,462, C. Holme, Folding Window Blinds.—16,479, C. Osman, Fixing Door-knobs on their Spindles.—16,480.—W. J. Reynolds, Lock-action Window Sash Fastener.—16,486, A. J. Boult, Alarums for Shop Doors, &c.

Dec. 16.—16,523, R. Holmes, Improvements in Fire Grates.—16,530, W. J. Gwynn, Improvements in Folding Steps.—16,538, A. F. Zimmerling, J. Knoeppel, and A. Pauly, Improvements in Soldering Irons.—16,540, A. J. Boult, Heating Apparatus.

Dec. 17.—16,577, H. Sutcliffe, Improvements in Ball Taps.—16,579, J. Oddy, Folding-up Kneeling Forms, Side Counters, Seats, &c.—16,602, G. H. Jennings, S. Jennings, and E. G. Brewer, Electric Bell Inuicating Apparatus.

Dec. 18.—16,624, T. McLean, Improvements in Cleaning Sinks.—16,630, F. H. Trier, Machinery for Dressing, Shaping, and Moulding Stone.—16,643, A. J. Boult, Construction of Combination Furniture.

PROVISIONAL SPECIFICATIONS ACCEPTED.

12,081, H. M. Robinson, Manufacture of Pottery.—13,728, W. Morris, Improvements in Bridges.—13,738, J. Carruthers, Shop-window Folding Shutters.—14,362, G. Redfern, Manufacture of Parquet Flooring.—14,744, A. Brenker, Fret Saws.—14,793, T. Batty, Strainers for Paints, &c.—15,019, W. Stewart, Stone-cutting Apparatus.—15,032, J. Wolstenholme, Slow-combustion Stoves.—15,070, S. S. Phillips and H. F. Green, Improvements in Water-closets.—15,414, S. B. Thomas, Window-sash Fastenings.—15,628, G. Marie, Colouring Stone, Marble, &c.—15,622, P. E. Ayton, Door Chains.—15,805, G. S. Buchanan, Ventilators.—13,712, R. G. Medland, Syphon Water Waste-preventer.—14,778, H. C. Webb, Door Knobs and Spindles,—14,892, J. Winfield, H. Evered, and H. W. Underhill, Combination Oven and Boiler, with Mantel Register Stoves.—14,989, R. L. Lowe, Cement or Composition for Laying Floors, &c.—15,071, D. Tennant, Drain-pipe Trap.—15,124, T. Pickles and B. Blakey, New Process for Treating Timber.—15,157, A. H. Kendall, Disconnecting Soil-pipes from Sewers, Ventilating same, and Trapping Waste Pipes thereto.—15,335, T. S. Ellis, Domestic Ventilators.—16,057, J. Rhodes, Cupboard-door Turns.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

1,588, J. Hummerston, Locking Catch for Bolts, Window Fasteners, &c.—2,538, J. H. Key, Machinery for Preparing Potters' and other Clay.—3,754, H. Conolly, Attaching Water-closet Basins to their Traps.—5,396, T. Thornton, Flooring Cramps.—6,014, W. Cowell, Improved Ventilator.—12,868, J. Linkleter and T. Linkleter, Ladders.—13,783, J. A. McDonald, Roller Bearings for Bridges and other Structures.—15,042, A. Waters, Hot-water Pipes for Heating Buildings.—2,301, J. Coulong, Water Closets, &c.—2,338, J. Sherrin, Ornamenting Glass for Windows.—2,435, W. Macritie, Sash and Casement Fastenings.—3,052, J. Newton, Flushing Water-closets.—4,147, J. J. Day and J. Day, Flushing Apparatus for Water-closets, &c.—9,322, A. M. Clarke, Apparatus for Striking Moulds for Handrails.—10,268, E. Midgley, Ventilating Drains, Tunnels, &c.—15,068, A. Emanuel, Cleansing Pipe to Overflow of Water-closet Basins.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

December 18.

By Wilkinson & Son.

Plumpton, Sussex—Sedgebrook Farm, 280 acres, freehold £2,430

By Worsfold & Hayward.

Dover—54, 56, and 58, Clarendon-street, freehold ... 660

Miscellanea.

The Sanitary Condition of Whitechapel. Reporting upon certain charges lately made by the members of the Sanitary Committee of the Jewish Board of Guardians, recently referred to in the *Builder*, the Whitechapel District Board of Works have just issued a long and elaborate statement embodying the investigations of a special sanitary committee. With reference to the more important complaint, that a large number of houses are unfit for human habitation, the committee state that the whole (87 in all) have been specially visited, and the charges made are not warranted by the facts. That many of the houses in the district have been subjected to very hard wear and to much ill-usage is perfectly true. There is hardly a house in the occupation of the poorer inhabitants which is not tenanted by more than one family, and the consequence is that every house so held has to be continually watched by the sanitary officers. As to the remedy suggested by the Jewish Guardians,—that whole areas might, little by little, be improved, and the buildings thereon removed without the costly processes involved by the Artisans' Dwellings Act,—the local authorities state that acres upon acres of houses have just been demolished there under the Artisans' and Labourers' Dwellings Acts and for railway purposes; many thousands of the residents have been turned out of their dwellings; acres more of houses are about to be pulled down, under the scheme known as Bell-lane scheme, by the Metropolitan Board of Works; and in the Pearl-street scheme it is proposed that a further area shall be cleared. It is self-evident that under the schemes promoted by the Metropolitan Board of Works for the improvement of the district and by the absorption of property by railway companies, a great number of houses have been destroyed, and it is estimated that about 12,000 people have been displaced, while accommodation has at present been provided for only about one-fourth part of the number of those disturbed. In addition to the destruction of the houses of the poor above referred to, the Whitechapel Board recall the fact that they have expended 35,000*l.* in improving Baker's-row and 38,000*l.* in widening Royal Mint-street, by which many dwellings of the poorer classes were destroyed. The Whitechapel Board therefore submit that great overcrowding of the houses which remain must of necessity take place.

New Insurance Buildings in Fleet-street.—A very extensive block of new buildings is as present in course of erection in Fleet-street for the Law and General Assurance Company. The new premises will replace the old buildings of the company, which have just been taken down, but they will be on a greatly enlarged scale, the adjoining premises on the west side, near the site of Temple Bar, having been demolished for the purpose of enlarging the site. The premises now in progress will have a frontage to Fleet-street about 50 ft. in length, and will be carried to a depth of 200 ft., extending to the north side of Harecourt, in the Temple. They will thus cover a ground area of something like 10,000 ft. Mr. R. W. Edis, of Fitzroy-square, is the architect; and Messrs. Holland & Hannen are the contractors.

New Dwellings for Artisans in Petticoat-square.—The large blocks of dwellings for the working classes which have been erected by the Commissioners of Sewers in Petticoat-square are so far completed that they are expected to be opened about the commencement of the new year, or within about twelve months from the time when the foundation-stone was laid. The main face of the several elevations is in yellow brick, but the south-west frontage, and also that on the north-east side, facing Petticoat-lane, are of a more artistic character. The lower portions of these frontages are in red moulded brick, pilasters of similar material being carried up to a height of upwards of 40 ft. Each block is surmounted by a pediment, with panels on each side, the pediments having in the centre the arms of the Corporation. This portion of the work, together with the whole of the surrounding enrichments, is in red terra-cotta. All the blocks are surmounted by open arches and parapets, with flat roofs enclosed and protected by ornamental railings. The buildings, which are upwards of 70 ft. in height, contain five floors, the ground-floor of the blocks at the south-east and north-east ends respectively consisting of shops about fifty in number. The buildings contain about 300 suites of apartments, varying from one to three rooms each. They are estimated to contain a population of about 1,200 persons. Mr. Mark Gentry, of Stratford, is the contractor for the buildings, the cost of which has been about 65,000*l*.

New Bank Buildings at Beckenham.—The London and County Banking Company have just opened spacious new banking premises at Beckenham, which have been erected from the designs of Mr. W. G. Bartleet, architect, of New Broad-street. The bank occupies a position in Church Hill, nearly opposite the old Parish Church (which is about to be rebuilt from designs also furnished by Mr. Bartleet). The building is in the Italian style, and faced with red brick and moulded brick dressings and cornices, the entablature and panels to the arched ground-floor windows being in Bath stone. The building has a frontage of 30 ft. to Church Hill, with a return frontage in Church Hill-road about 90 ft. in length. In the basement, the roof of which consists of iron and concrete, is the strong-room, lined with white glazed brick, also the book-room, the doors and fittings of these apartments having been furnished by Messrs. Chubb & Sons. The banking-room on the ground-floor is 36 ft. square. Immediately adjoining is the manager's room. At the rear of this floor, with a private entrance from Church Hill-road, is the dining-room, kitchens, and other domestic offices in connexion with the manager's residence. The two upper floors contain the drawing-room, bath-room, and several bedrooms. The contractor is Mr. Cox, of Beckenham, the cost of the buildings being 3,300*l*.

Strong Rooms in Chancery-lane.—A large block of chambers and offices, having a frontage of upwards of 240 ft., with a depth of over 100 ft., are now on the point of completion on the east side of Chancery-lane. They are designated New Stone Buildings, and are in continuation of Victoria and New Court Chambers, buildings of the same class recently erected. The several floors contain altogether upwards of 300 offices. The basement of the building is about to be appropriated to safe deposit purposes by the Chancery-lane Safe Deposit Company, and the works in connexion with this portion of the building are now in progress. The strong rooms and safes are being constructed by Milner's Safe Manufacturing Company, of Finsbury-pavement and Liverpool. There will be three strong rooms, composed of iron and steel, fire-proof and thief-proof. One of these strong-rooms will, it is stated, be the largest in the world, and will contain 5,000 safes. The other two rooms are being specially constructed for the safe keeping of cash-boxes, jewel-cases, and plate.

Society for the Encouragement of the Fine Arts.—The programme of this Society, which holds its annual *conversazione* on Jan. 15 of next year, includes several lectures of interest; among them are one by Mr. G. Aitchison, on "Architecture in the Nineteenth Century" (April 16); Mr. Cave Thomas, on "The New Æsthetics" (April 30); Dr. Campbell, on "Physiology in Art" (March 12); and Mr. G. C. Haité, on "Wall-papers and their Manufacture" (Feb. 12).

New Public Hall, Forres.—The new public hall at Forres, N.B., has been opened for use. The hall is built attached to the buildings of the Mechanics' Institute, to which the old hall of the Institute forms a spacious approach and ante-room. There is accommodation provided for seating an audience of 800 people comfortably. A gallery is continued round three sides of the hall, and the platform is at the north end. Above the platform an organ-loft is provided. The committee appointed as their architect Mr. John Rhind, Inverness, and he has designed the new hall in the Greek style, in harmony with the Classic character of the old building. The tradesmen employed were Jas. Macdonald, mason, Kingussie; Alex. Laing, carpenter; Alexander Forbes, slater; Adam Ross, plasterer; John Taylor, plumber; and Archibald Macdonald, painter and glazier,—all of Forres. Messrs. Falconer Brothers, Inverness, supplied the cast-iron work; and Messrs. King & Son, Glasgow, the ornamental castings.

Test of Glue.—The following is an excellent method of testing glue. Carefully weigh a piece and suspend it in water during twenty-four hours at a temperature not exceeding 50° Fahr. The colouring matter is thus precipitated, and the glue swells in consequence of the absorption of the water. On its removal, the increase in weight will be found to be in proportion to the quality. The weight of the colouring matter can also be ascertained by weighing the glue a second time after it has been thoroughly dried.

Royal Institute of Painters in Water-Colours, Piccadilly.—Of the total number of works exhibited at the late Exhibition of the Royal Institute of Painters in Water-Colours, Piccadilly, amounting to 1,083, 365 pictures found purchasers within the galleries, realising the sum of 12,335*l*. 8s. The prices of the pictures sold ranged from 5 guineas to 400 guineas.

Ventilation.—The Æolus Waterspray and General Ventilating Company, of 235, High Holborn, have received instructions from H.M. Office of Works to apply their complete system of inlet and outlet ventilation, and supply of warm or cold fresh purified air, to the Registry Room of the G.P.O. (New Building), St. Martin's-le-Grand.

Smethwick.—New Higher Grade Schools for the Harborne and Smethwick School Board, from designs by Messrs. J. P. Sharp & Co., architects to the Board, are now being built in Crocketts-road, Smethwick, by Mr. G. H. Marshall, builder, Smethwick.

Improvement in Cable Railways.—It is stated that Mr. A. H. Mathesius, the engineer who superintended the construction and erection of the traction machinery of the Brooklyn Bridge, and who has had extended experience in cable propulsion, has worked out a new arrangement for this purpose, for use on surface roads, which he believes will reduce the first cost of construction from 60,000 dollars to not more than 10,000 dollars per mile. At present the trough in which the cable runs is from 30 in. to 48 in. in depth, the gripping apparatus being worked in this trough, which is constantly exposed to being filled with dirt and snow. To get this trough in position requires a general opening up of the road, and the usual obstructions of water, gas, and sewer pipes are met with. Mr. Mathesius proposes to use a 6-in. covered pipe, running along the top of the front cross ties, which is put in place by simply removing the roadway at the centre between the tracks. The gripping apparatus works outside the tube. As the car moves along, it uncovers the tube at the front end of the car and covers it at the rear, leaving only the part of the tube that may be under the car uncovered. Curves of a radius of 45 ft. may be made by this arrangement.—*Iron*.

Sanger's Amphitheatre. — The Metropolitan Board of Works have resolved,—"That a letter be addressed to the Lord Chamberlain to the effect that the gangways of the pit of Sanger's Amphitheatre are allowed to be obstructed, contrary to the clear intention of the Board in requiring the formation of such gangways, and suggesting that his Lordship do take such steps as he may think right with a view to preventing such obstructions; and that Mr. G. Sanger, the owner of the theatre, be informed, in reply to his letters complaining of the danger and annoyance caused by the existence of the central gangway in the pit, that, inasmuch as he had disregarded the intimation already given to him by the Board on the subject, they have felt it their duty to communicate with the Lord Chamberlain thereon."

Diaries.—Messrs. Hudson & Kearns send us their very well-arranged series of diaries for business men, including also one entitled the "Architect's Diary," though we do not discern the precise applicability of this diary to architects. It certainly cannot lie in the brief table of characteristics of leading styles, which in a book for architects are too absurd, and should be omitted in future. The "date-indicating blotting-pad," with strips of paper at the side for immediate memoranda, we have found very useful.

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Manufacturing Premises	Not stated	100 guineas, first 30 " second 20 " third	Jan. 7th	i.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Construction of two Bridges, Lenton	Midland Railway Co.	A. A. Langley	Jan. 2nd	ii.
Supply and Erection of Ironwork for Bridges	do.	do.	do.	ii.
Alterations to Derby County Court Offices	Commissionrs of Works	*Official*	Jan. 5th	i.
Construction of Road, Lee-on-the-Solent	J. C. Robinson	.....	do.	ii.
Isolation Block, Building Boundary-Walls, &c., to Hospital	Uxbridge Jolnt Hospital Board	Surveyor	Jan. 7th	ii.
Sewerage, &c., Knighton	Blaby R. S. A.	E. L. Miles	Jan. 9th	ii.
Re-seating and Improvement, and Enlargement of Holy Trinity Church, Sheerness	Committee	R. Wheeler	do.	i.
Supply of Materials	Liverpool Corporation	*Official*	Jan. 10th	xvii.
Re-lining Swimming-Bath	Commissionrs of Public Baths, &c., Grenwch	.....	Jan. 12th	ii.
Cleaning out Pond and Works in connexion therewith, Streatham Common	Met. Board of Works	Architect	Jan. 13th	ii.
Tar Paved Walks, Peckham Rye Common	do.	do.	do.	ii.
Works and Materials	Parish of St. Marylebne	*Official*	Jan. 15th	ii.
Breeze, Ashes, and Dusting	do.	do.	do.	ii.
Carting Slop and Sweepings	do.	do.	do.	ii.
Watering Streets and Roads	do.	do.	do.	ii.
Broken Stone, Footway Kerb, and Yorkshire and other Footway Paving	do.	do.	do.	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Civil Engineer or Surveyor	Billesden U. R. S. A.	Not stated	Jan. 2nd	xvi.
Borough Surveyor	Corporation of Bolton	Not stated	Jan. 6th	xvi.
Instructing Assistant-Warder of Smiths' Work, for Prison Service	Home Office	100*l*.	Not stated	xvi.

Bridging the Susquehanna.—The magnitude of the undertaking of the Baltimore and Ohio Railroad Company in building a railway to Philadelphia cannot (says *Iron*) be appreciated without a clear understanding of the gigantic work at the Susquehanna. The bridge over that river will be one mile and a quarter in length, including the trestle-work over Garrett Island. This island is about midway in the river. Across the channel to the west of it there will be one span of 520 ft. in length, at an elevation of 90 ft. above mean high tide, and four deck spans of 480 ft. each. Over the east channel there will be a through span of 380 ft., a deck span of the same length, and another deck span of 520 ft. A clear conception of what will be the distance across the bridge may be had by bearing in mind that it will be 6,300 ft. long, and that the bridge of the Philadelphia, Wilmington, and Baltimore Railroad is only 3,300 ft. The approaches and the crossing over the island are of iron trestle-work. The spans constitute the superstructure of the bridge, and will rest upon eleven large piers and two massive abutments of granite masonry. The piers are built upon caissons sunk by the pneumatic process to rock bottom. An engineering feat never attempted before was successfully accomplished at one of the piers. The caisson had sunk to within 2 in. of the bed-rock at one point, when it was discovered that at other points within the area the rock was 12 ft. lower. The whole structure, which weighed 6,600 tons, was held in suspension for two weeks, while the bed-rock was laid bare at every point, and a concrete foundation built up from the rock to the working chamber in the caisson. The highest points of the bed-rock were blasted off inside the caisson so skilfully that not the slightest damage was done. Work is carried on at the bridge night and day, the whole force employed including 700 men.

Stable, &c., Fittings.—The Carron Company send us their catalogue of stable and cattle-house fittings. The practical ironwork appears very well designed. There are some well-intended attempts to give ornamental treatment to some of the cast-iron work. Such attempts in trade catalogues are seldom successful, but one or two in the present instance are better than ordinary.

TENDERS.

For the erection and completion of the Leadenhall Market extension for the Corporation of the City of London. Mr. Horace Jones, architect. Quantities by Messrs. William Reddall & Son:—

Nixon	£16,917 0 0
Conder	16,465 0 0
Hall & Beddall	16,430 0 0
Greenwood	16,273 0 0
Hart	16,2[illegible]6 0 0
Ashby Bros.	16,034 0 0
Perry & Co.	15,736 0 0
Holland & Hannen	15,647 0 0
Webster	15,580 0 0
Bywaters	15,460 0 0
Boyce	14,970 0 0
Chappell	14,960 0 0
Killby & Gayford	14,889 0 0
Morter	14,563 0 0
Gentry	14,475 0 0
Mowlem & Co.	13,490 0 0

For new shop-front and fittings at 147, Shoreditch, for Mr. Eaton Buck:—

W. Shurmur (accepted) £225 0 0

[No competition.]

For repairs, &c., at Aston Grange, Preston Brook, Cheshire. Messrs. Linaker & Davies, architects, Frodsham:—

General Repairs.

Stelfox & Carter, Northwich	£464 10 1
T. Davies, Frodsham	425 0 0
Executors of the late John Gleave, Frodsham (accepted)	326 16 6

Painting, &c.

F. Spencer, Frodsham (accepted)	59 15 0

For the erection of a pair of cottages, East Donyland, Colchester, for Miss M. E. Shave. Mr. J. W. Start, architect, Colchester:—

A. Gladwell, Colchester (accepted) ... £273 0 0

[No competition.]

For bottling stores, &c., for Messrs. J. A. Alabaster, Kingsland-road. Mr. F. J. Smith, architect. Quantities by Mr. Walter Barnett:—

Chessum	£1,542 0 0
S. Hayworth	1,374 0 0
Allard	1,300 0 0
R. Forest	1,287 0 0
Stimpson & Co.	1,249 0 0
T. Boyce	1,245 0 0
W. Shurmur (accepted)	1,179 0 0

For alterations, &c., to premises, St. Andrew's-street, Holborn. Mr. F. J. Smith, architect. Quantities by Mr. Walter Barnett:—

R. & G. Russell	£4,558 0 0
R. Hindle	4,473 0 0
W. & D. McGregor	4,400 0 0
G. Colls & Son	4,400 0 0
Stimpson & Co.	4,290 0 0
Burch & Co.	4,289 0 0
Scharien & Williams	4,250 0 0
Miller & Brown	4,129 0 0
T. Boyce	4,092 0 0
J. O. Richardson	4,017 0 0
W. Shurmur	3,978 0 0

For alterations at the Bell public-house, Middlesex-street, for Mr. W. Rose. Messrs. Wilson, Son, & Aldwinckle, architects:—

W. Shurmur (accepted).

[No competition.]

SPECIAL NOTICE.—Lists of Tenders frequently reach us too late for insertion. They should be delivered at our Office, 46, Catherine-street, W.C., *not later than Four p.m.* on THURSDAYS.

PUBLISHER'S NOTICES.

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DOUGLAS FOURDRINIER, Publisher,
Addressed to No. 46, Catherine-street, W.C.

Advertisements for the current week's issue must reach the Office before THREE o'clock p.m. on THURSDAY.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to Advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

SPECIAL.—ALTERATIONS in STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same, must reach the Office before TEN o'clock on WEDNESDAY mornings.

PERSONS Advertising in "The Builder," may have *Replies addressed to the Office*, 46, Catherine-street, Covent-garden, W.C. *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage.

TERMS OF SUBSCRIPTION.

"THE BUILDER" is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum, PREPAID. To countries within the Postal Union, 26s. per annum. Remittances payable to DOUGLAS FOURDRINIER, Publisher, No. 46, Catherine-street, W.C

TO CORRESPONDENTS.

F. (your inquiry was overlooked last week; we are obliged to decline recommending books.—see permanent notice to that effect below).—H. G. (next week).—W. C. T.—E. I. B. (next week).—H. H. C. (shall be glad to have it).—F. H. (next week).—A. B. (it is a purely legal question, on which we cannot advise. Correspondents should enclose name and address).

All statements of facts lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read a public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

Best Bath Stone.
WESTWOOD GROUND,
Box Ground, Combe Down,
Corsham Down,
And Farleigh Down.
RANDELL, SAUNDERS, & CO., Limited,
Corsham, Wilts. [ADVT.

Dry Corsham Stone.
150,000 FEET CUBE.
PICTOR & SONS,
BOX, WILTS.
[ADVT.

Doulting Freestone and Ham Hill Stone of best quality, in blocks, or prepared ready for fixing. An inspection of the Doulting Quarries is respectfully solicited; and Architects and others are CAUTIONED against inferior stone. Prices, delivered to any part of the United Kingdom, given on application to CHARLES TRASK & SONS, Norton-sub-Hamdon, Ilminster, Somerset.—Agent, Mr. E. WILLIAMS, No. 16, Craven-street, Strand, W.C. [ADVT.

Doulting Free Stone
HAM HILL STONE,
BLUE LIAS LIME
(Ground or Lump),
For prices, &c., address S. & J. STAPLE, Quarry Owners, Stone and Lime Merchants, Stoke-under-Ham, Ilminster. [ADVT.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds, and milk-rooms, granaries, tun-rooms, and terraces. [ADVT.

Asphalte.
Seyssel, Patent Metallic Lava, and White Asphaltes.
M. STODART & CO.
Office:
No. 90, Cannon-street, E.C. [ADVT.

MICHELMORE & REAP,
Manufacturers of
CHARLES COLLINGE'S PATENT.
COLLINGE'S PATENT HINGES,
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Self-Acting "FALL DOWN" GATE STOPS,
and IMPROVED GATE FITTINGS of every Description,
36A, BOROUGH ROAD,
LONDON, S.E.
DISCOUNT TO BUILDERS.

GOLD AND SILVER MEDALS AT AMSTERDAM EXHIBITION.
ZINC ROOFING.
F. BRABY & CO.,
LONDON, LIVERPOOL, GLASGOW.
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PARTICULARS ON APPLICATION. CHIEF OFFICE: 360, EUSTON ROAD, LONDON.

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